ARMY

DECEMBER 1958 • 50¢

REPORT ON THE 1958 ANNUAL MEETING

Also in this issue: *S. L. A. MARSHALL:* GEN. BRUCE CLARKE'S BLACKEST CHRISTMAS

AUSA NOMINATION AND ELECTION PROCEDURES ARE DETAILED ON PAGE 89

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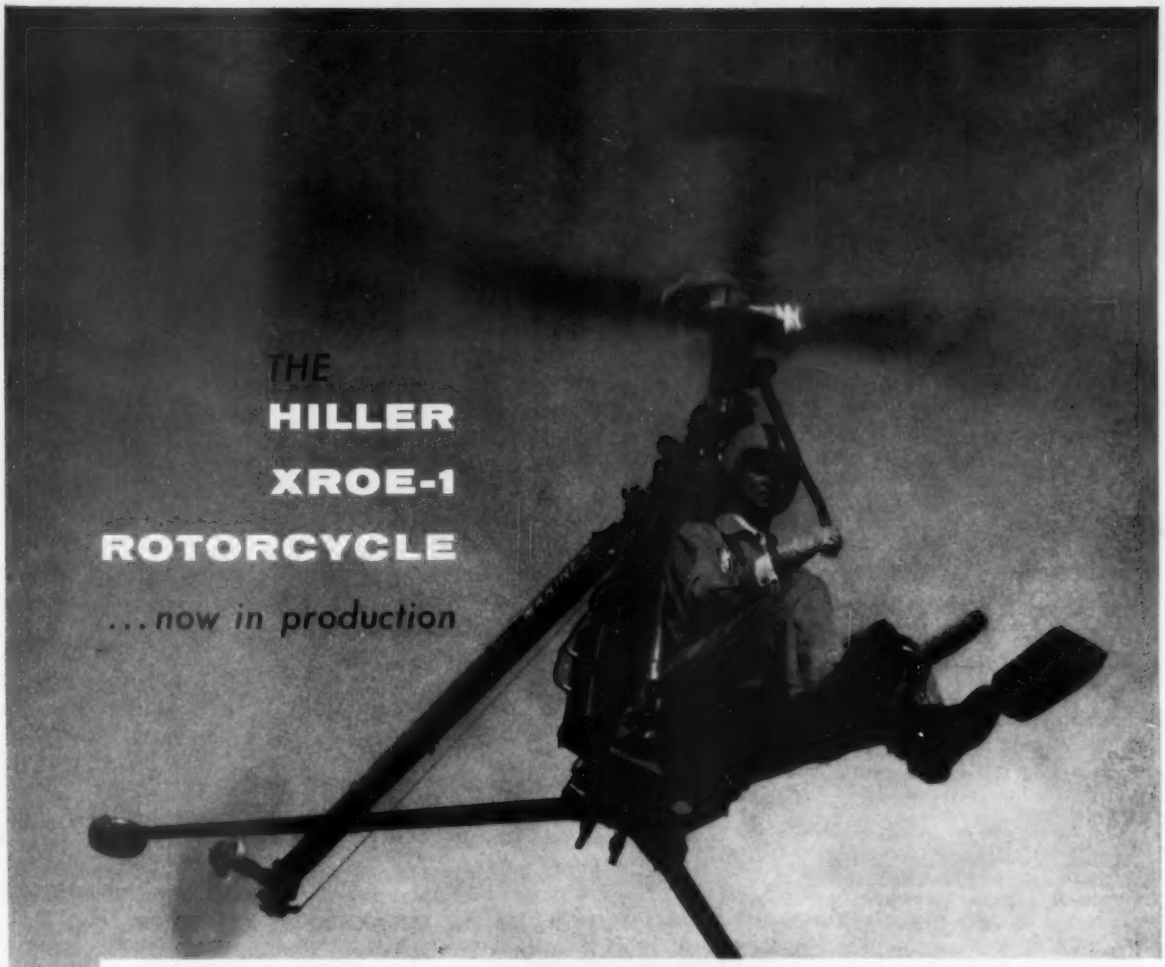

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PALO ALTO, CALIFORNIA · WASHINGTON, D.C.

ARMY

magazine of the **ASSOCIATION OF THE UNITED STATES ARMY**

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ARMY is a professional military magazine devoted to the dissemination of information and ideas relating to the military art and science representing the interests of the entire Army. *ARMY magazine Strives to—*

Advance man's knowledge of warfare in the fields of strategy, tactics, logistics, operations, administration, weapons and weapons systems.

Advance man's knowledge and understanding of the soldier as an individual, as a member of a trained unit, and as a member of the whole Army; emphasizing leadership, esprit, loyalty, and a high sense of duty.

Disseminate knowledge of military history, especially articles that have application to current problems or foster tradition and create esprit.

Explain the important and vital role of the United States Army in the Nation's defense and show that the Army is alert to the challenges of new weapons, machines, and methods.

Advance the status of the soldier's profession.

AUSA By Laws, Par. 13 Article II

TACTICAL AND TECHNICAL

Incitement to Respond ..... *An Editorial* **20**
Christmas Tree Defeat ..... *Brig. Gen. S. L. A. Marshall* **22**
Reading Russian Maps ..... *Capt. William V. Kennedy* **26**
Plan Beyond the Assault ..... *Lt. Col. Charles R. Cawthon* **28**

AUSA'S FOURTH ANNUAL MEETING

THE ARMY AND THE NATION'S SECURITY

Future Requirements ..... *Gen. L. L. Lemnitzer* **37**
Determined Deterrence ..... *Hon. Wilber M. Brucker* **38**
Priorities and Improvements ..... *Gen. Nathan F. Twining* **42**
AUSA's 1958 Resolutions **76**
By Jupiter! We'll Do It! ..... *Master Sgt. Forrest K. Kleinman* **44**

THE DEFENSE OF THE EAST AND WEST

NATO's Role Today ..... *Adm. Antoine Sala* **48**
SEATO's Role Today ..... *Prince Wan Waithayakon* **49**

THE APPLICATION OF MILITARY FORCE

Whirlwind of Interacting Change ..... *Roger Hilsman* **52**
Limited War Strategy ..... *Robert E. Osgood* **53**
Political Objectives ..... *Paul Nitze* **54**
American Attitudes ..... *William Emerson* **56**
Effects of Nuclear Weapons ..... *Hans Morgenthau* **57**

THE ARMY'S CAPABILITIES FOR LIMITED WAR

The Why of STRAC ..... *Gen. Bruce C. Clarke* **59**
The What of STRAC ..... *Maj. Gen. Robert F. Sink* **60**
The How of STRAC ..... *Maj. Gen. W. C. Westmoreland* **61**
The Logistics of STRAC ..... *Brig. Gen. Teddy H. Sanford* **62**

THE ARMY MEETS THE CHALLENGE OF TOMORROW

Army Research & Development .. *Lt. Gen. Arthur G. Trudeau* **66**
The Army Missile Program ..... *Maj. Gen. John B. Medaris* **67**
The Army in Space ..... *Dr. Ernst Stuhlinger* **69**
Experiments in the Future .... *Brig. Gen. Frederick W. Gibb* **70**

THE ARMY'S ROLE IN THE AIR DEFENSE OF NORTH AMERICA

ARADCOM's Growth Potential .... *Lt. Gen. Charles E. Hart* **72**
Air Defense Today ..... *Col. Perry B. Priest* **72**
Air Defense Tomorrow ..... *Lt. Col. Richard J. Titley* **73**
Strategic Aspects ..... *Lt. Gen. Charles E. Hart* **75**

THE ANNUAL BUSINESS MEETING

The President's Report **79**
Minutes of 1958 Annual Meeting **83**

DEPARTMENTS

The Month's Mail **4**
Front and Center **14**
The Month's Books **85**
Report from Your AUSA CP **89**

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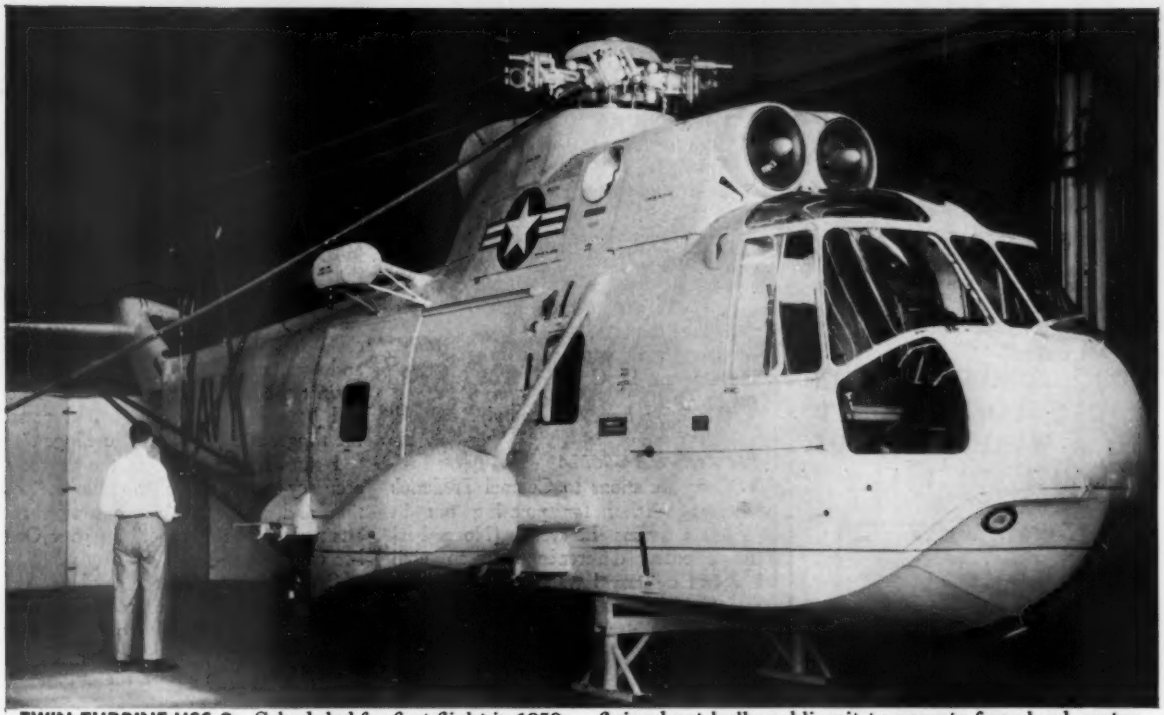
AROUND THE WORLD WITH SIKORSKY HELICOPTERS



TWIN-TURBINE HSS-2—Scheduled for first flight in 1959, the HSS-2 anti-submarine helicopter (Sikorsky S-61) is being developed for the U. S. Navy. It features twin turbine engines, all-weather flight capabilities, and a flying boat hull enabling it to operate from land, water, mud or snow. Shown above in mockup, the new Sikorsky HSS-2 will offer substantial advances in payload, endurance, and cruising speed.

ELECTRONIC TETHER—The Army demonstrates a device developed by Sikorsky for ground control of a flying helicopter using a 50-foot cable. The "tether" aids in hooking up loads to a sling, as shown above, and is also useful for maneuvering near the ground when the pilot's visibility is reduced by darkness, dust or snow.

100th S-56 HELICOPTER—Sikorsky Aircraft has completed the 100th S-56, the free world's largest production helicopter. The aircraft was a Marine Corps HR2S-1. The S-56 is also built as a U. S. Army troop and cargo carrier designated the H-37A. An S-56 holds the world speed record for helicopters —162.7 mph, set in 1956.

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STRATFORD, CONNECTICUT
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BUILT TO
2,000
DIFFERENT
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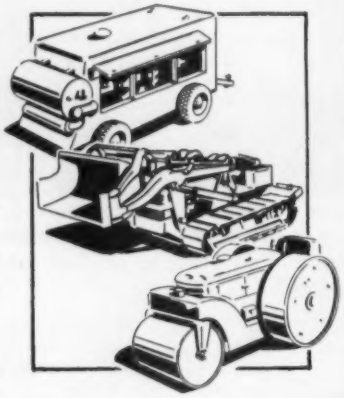

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MUSKEGON AND DETROIT

THE MONTH'S MAIL

ARMY Tribute to AEF

• Congratulations on the AEF panel used on page 17 of the November issue of ARMY. It's a real classic!

We'd appreciate permission to reproduce it (with full credit to ARMY) in the next issue of our nationally distributed official magazine.

CARL SWICKERATH
Editor

Society of the
3d Infantry Division
Washington, D. C.

• *We were happy to comply.*

The Army and USCMA

• Congratulations to Colonel Frederick Bernays Wiener for pointing out in "Soldiers versus Lawyers" [November] the essential difference between civil law and military law, and the threat to the efficiency and discipline of our armed forces which derives from our failure to observe and preserve these sound distinctions.

MAJ. GEN. T. A. LANE
Office of the CG
Fort Leonard Wood, Mo.

Building Semantic Castles

• You are to be commended for publishing "Alphabet Soup, Anyone?" by Col. Gordon A. Moon, in the October issue. It is refreshing to know that our professional magazine will print such articles. Colonel Moon's is particularly appropriate and timely.

In our endeavor to adapt ourselves to the requirements of the unknown nuclear battlefield there has been too great a tendency to forget the applicable reality of experience. There have been too many semantic castles built as concerns staff organizations and procedures. Rather, our staff organizations and staff procedures should be tested for continued validity by maneuvers and map exercises and wargaming to determine what defects, if any, exist when applied to our visualization of the future battlefield. By such tests we can determine what remedial measures, if any, are needed.

NAME WITHHELD BY REQUEST

Decoration or Technique?

• I enjoyed the front cover of the October issue of ARMY. However, correct me if I am wrong on the gunner's position with machine gun, M60, caliber 7.62mm, on bipod:

"The gun is properly supported when the bipod is correctly adjusted and the gunner uses a good prone position. The gunner positions his body directly in rear of the gun with his legs well spread. He rests the weight of his upper body evenly on both elbows. With the hinged buttplate raised he pulls the stock well into his right shoulder, grasps the grip with his right hand and places his forefinger on the trigger. With his left hand on the top of the cover he pulls down and to the rear. He places his cheek against the cover, lets out half of a normal breath, holds it, aims, and presses the trigger evenly with his forefinger."

I sincerely believe that the degree of accuracy attained by the above "position and grip" will far outweigh that attained by the "gunner" on your October cover.

One additional comment: The barrel lock is raised. This unlocks the barrel group from the receiver group and might possibly result in a "down range" barrel group in the event the gunner attempted to fire.

When was the picture taken and what unit was involved?

LT. DON O. STOVALL
USAIS
Fort Benning, Ga.

• *Lieutenant Stovall is so right, and should be congratulated on his quick perception. However, the picture was used only to emphasize the need for modern weapons. It wasn't meant to illustrate the technique of firing the M60. This was a publicity picture taken at Aberdeen Proving Ground on 24 January 1957, at the time details and photographs of the M60 were released to the press.*

Don't Let Us Down

• The recent controversy over breaking up the Army missile team and turning it over to NASA (National Aeronautic and Space Agency) compelled me to write this.

According to the press, a decision has not been made by the President, so now is the time to discuss the matter. I am sure a lot of thought and logic have gone into the plan whereby the Army's missile team is turned over to a civilian agency. There are many problems connected with running an army that logic won't solve.

We, the junior officers, consider the missile team a part of the U. S. Army.

READY FOR ACTION
any time, any place!

Army YHO-2HU Helicopter

For reconnaissance and liaison, the company commander needs a ruggedly built helicopter...one that operates for long periods of time without being laid up for repairs or time consuming maintenance.

The Army YHO-2HU two-place helicopter (Hughes Model 269A), which is now under evaluation, fulfills this need. It features simplified design, highly reliable components, and ease of maintenance. The YHO-2HU is always ready for action.

At a recent Maintenance Inspection Conference, the first ever to be conducted under Army leadership, quick removal and replacement of dynamic components were demonstrated. The power plant package was removed and reinstalled by 3 men in only 43 minutes. A main rotor blade was removed and installed by 2 men in just 6 minutes. No special tools or lifting equipment were required for these operations.

The YHO-2HU, designed specifically for the two-place mission, for the first time makes it practical to have a helicopter at the disposal of the company commander. With its hedge-hopping abilities and extremely small silhouette, the YHO-2HU will reduce the hazards of enemy fire. The small size gives it additional combat advantages — it is easy to land, park and conceal.

The YHO-2HU is a fully reliable, easily maintainable, high performing, low-cost two-place helicopter. With its proven 180 h.p. Lycoming 0-360 engine, the YHO-2HU flies at a speed of 90 m.p.h. and has a cruising range of 150 miles. It has a useful load of 660 pounds and an empty weight of 890 pounds.

For an illustrated brochure describing the YHO-2HU please write to the address below.

HUGHES TOOL COMPANY

AIRCRAFT DIVISION

CULVER CITY, CALIF.

A giant step has been taken in the U.S. military development program with contracts for the creation of an unprecedented primary strategic weapon system. It is the Air Force DYNA-SOAR, now in Phase-I design stage by a six-company project team under Martin direction.

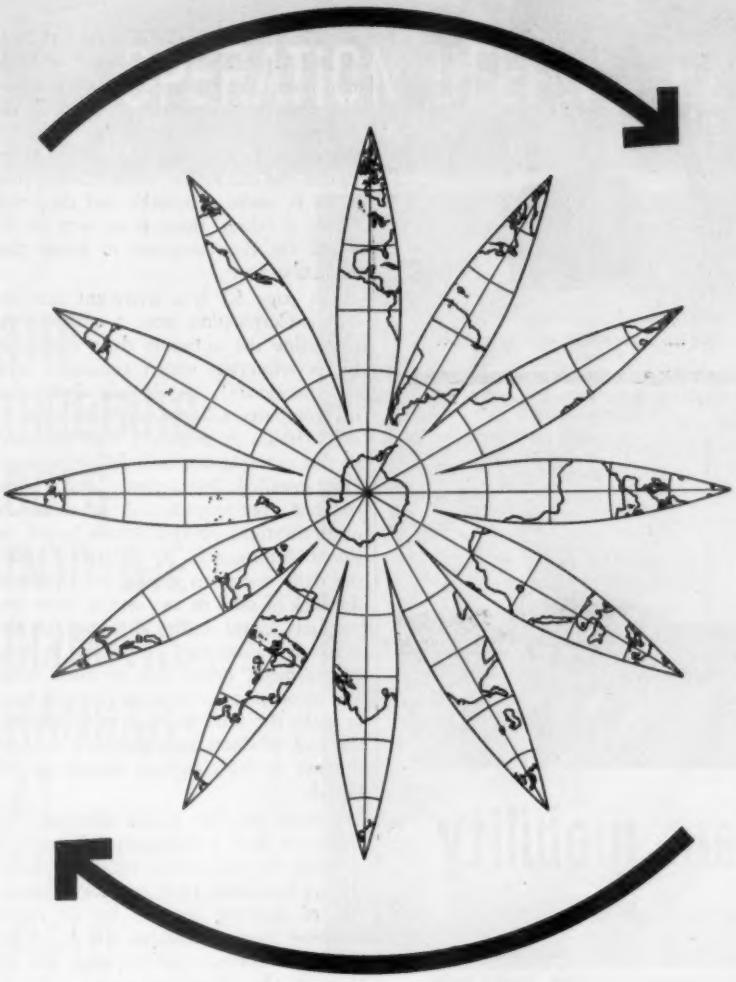
DYNA-SOAR—the most advanced military weapon system now in development—is a pilot-controlled bomber-reconnaissance space vehicle, its mission being to circle the earth at orbital velocity, with controlled aircraft landing capabilities. It will be propelled by several stages of rocket boosters, enabling it to operate from ground level to the ionosphere at hypersonic speeds.

In an entirely new and advanced concept of integrated industry coordination, the six companies teamed in this No. 1 military program constitute top capabilities in the basic areas of airframe, propulsion and radar guidance system development.

Bell, a pioneer in the boost-glide field, will design and build the airframe of the vehicle ...Bendix will develop communication, telemetry, hydraulic and electrical power conversion systems...Goodyear will produce the crew-escape capsule and the radar systems ...Minneapolis-Honeywell will be responsible for guidance and navigation to keep DYNA-SOAR on course and supply position and velocity information to the crew. American Machine & Foundry's responsibility is an advanced system of ground handling and launching equipment...And Martin will establish the configuration and design of the rocket boosters, carry out an experimental aerodynamic program for the complete vehicle, and assemble a full-scale mockup of the system.

Because of the challenging technical problems involved, the presidents of the six companies – aggregating assets of over $2 billion – comprise an active advisory panel, with their top engineering teams participating.

Never before in military history has so formidable a task force of specialized industrial capabilities been applied against such an advanced concept.



MARTIN
BALTIMORE·DENVER·ORLANDO

We are extremely proud of its accomplishments with limited funds and their own initiative. If the truth were known, I suspect its accomplishments in the missile field have raised the morale of the Army more than all the pay raises and new uniforms. The respect and pride that people of the Army have for the men and women of our missile team can't be bought with money. It is also something that can't be pushed around.

On the atomic battlefield the infantry soldier will need faith in his weapons and in the people who make them. Never in the Army's history has a group of scientists been held in such high esteem as has our missile team. The close link between the men who plan and produce our missiles and the soldiers who will use them in combat is extremely vital. For the service that is responsible for all our air arm is today, and which pioneered man's entry into space, to lose its missile team to another agency could be disastrous.

The junior officers and enlisted men who will fight the next war are unable to exert any influence other than to assure the high command that the loss of our missile team will be a great blow to our pride, our esprit, and our ability to fight the next war.

Please don't let us down.

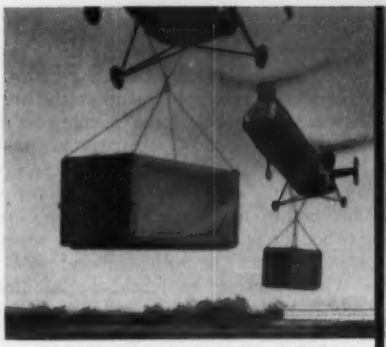
CAPT. EDWIN E. BROOKS
Grand Rapids, Mich.

Man Does the Thinking

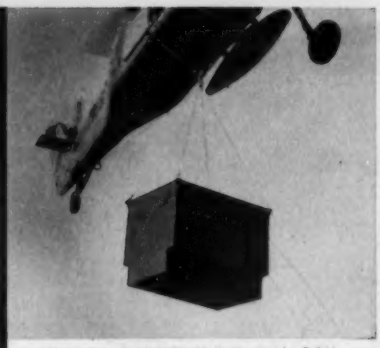
● "The Real Pushbutton War," by Max Carasso, in the October issue, was quite interesting to me because of the possibilities it raised of converting the U. S. Army Armor Center Ordnance Office at Fort Knox to machine operations.

In reviewing various proposals from manufacturers as well as the article in ARMY, the implication is always made that the electronic data processing machines are able to think. I believe this is a fallacy. None of these machines can accept data, weigh the consequences of one action against another, and decide on the best course of action except on a purely mathematical basis. It seems to me it would be better to accept these machines because they are combinations of tremendous filing cabinets where multitudes of data can be stored and be instantly available. They can almost instantaneously solve complex mathematical equations as well as mathematically compare elements of filed data with one another in addition to new input data.

An example of the fallacy which apparently credits the machine with thinking powers occurs on page 51: "This computer locates eighty thousand freight cars, tells whether they are full or empty, their current destinations, and where they will be needed next." We must remember that the computer can only indicate the location of the freight cars if this



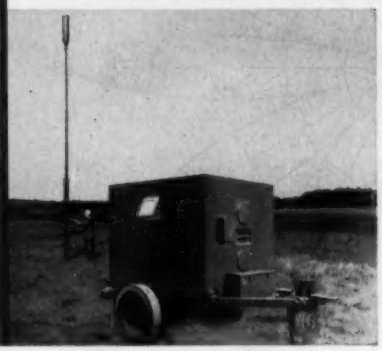
Helicop-Hut* Communication Stations in Flight.



Flight test of AN/MRC-60 Radio Set in S-144 Shelter.

Teletypewriter Communications Center in Craig Model 140 Shelter.

Craig Trailer Van (70" x 58" x 51") and 50 Ft. telescoping antenna mast.



Leader in system mobility

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Craig leads the way because Craig builds shelters better — through continuing research, engineering and design programs. Shelters are field-proven, stronger, lighter because of Craig's unique foamed-in-place plastic and aluminum construction.

And Craig's engineering staff is equipped to supply your electrical and mechanical system requirements to full military specifications — from basic structure to complete electronic installation.

Combine this capability with Craig's extensive systems experience and you receive the combination you're looking for: quality, reliability and dependability — at reasonable cost.

Send your system requirements to:

Craig Model 140 Shelter Assembly Line.

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DEPT. C-1, 360 MERRIMACK STREET, LAWRENCE, MASSACHUSETTS
Tel.: MUrdock 8-6961

Los Angeles 45, California, 6214 W. Manchester Ave.
SPring 6-0025

Haddonfield, New Jersey, 1016 Berlin Road
HAzel 8-2400

Washington, D. C., The LaSalle, Suite 815
1028 Connecticut Ave., N.W., District 7-1575

information has been fed into it in some way. If a car is scheduled to load at Point A and leaves there for Point B at a certain hour (the average speed of the train also must be fed into the machine), the computer will then report the arrival of the car at B at a certain time. However, should the conductor, while moving from A to B, make a mistake and drop that car at a siding, there is no way in the world for the computer to locate that particular car.

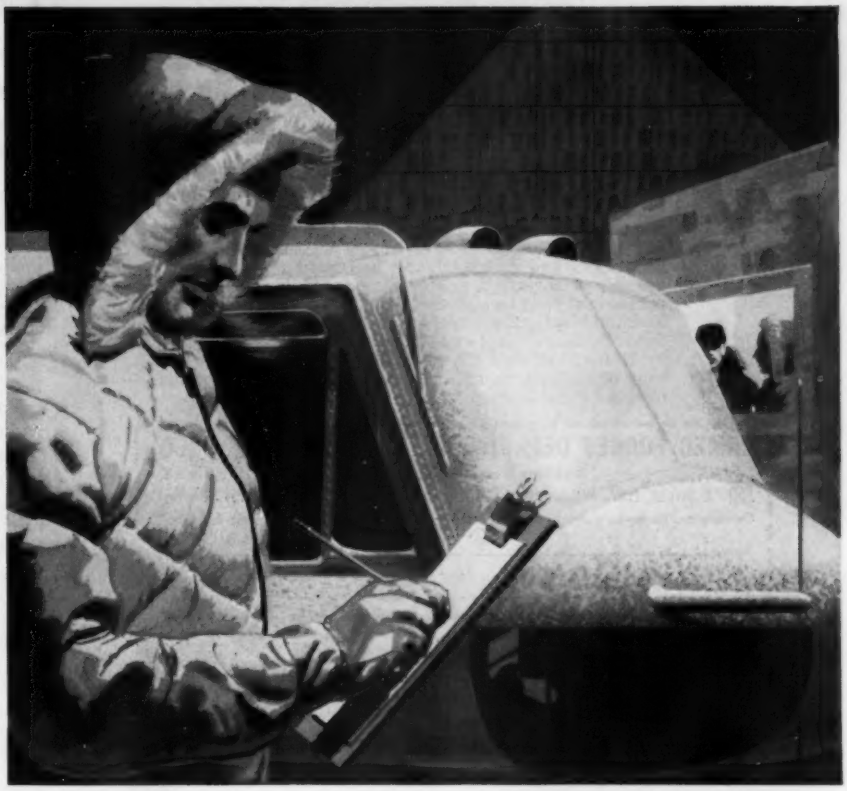
On page 52 is a statement that the Texas Corporation uses a computer to determine the optimum daily operations of its refineries, which concludes with the question: ". . . do you doubt that the computer *tells management what to do?*" [Italics in original.] The computer in this example can only follow management-installed instructions, make comparisons, pre-programmed selections or mathematical computations based on stored information to determine what the daily operation should be. However, the lack of sales in any one of these end products could cause an upset in the company's inventory position, so that management, being able to think without recourse to a machine, would have to make the final decision as to whether the end products recommended through the use of the computer should be followed.

Farther on the article develops the argument that a computer is positively essential for mobilizing industry at the start of hostilities. Here we face the problem of deriving answers for an entire economy from a machine which cannot consider emotions, politics, and the influence of influential people. While it might be highly desirable to follow the predictions of this machine, can we visualize anyone ceasing the manufacture of armorplate for tanks and increasing the output of armorplate for aircraft, if a human decision has been made that more tanks are desired, regardless of what answers the machine is spewing out? Furthermore, if we should ever install a machine which would actually control our entire economy in wartime, it would become an absolute, prime target for the enemy. Unfortunately our enemies have always been gifted with as much brains, craftiness, ingenuity, and determination as we. The result is that except for a few extremely well-guarded secrets, too many have gotten into their hands. If we did not develop people who are able to make decisions after complex mathematical analysis, and the enemy penetrated to our machine, where would we be?

I offer these comments not to disparage the use of automatic data processing machines and computers, but rather to suggest that we keep them in proper perspective and not credit them with thinking powers as the manufacturers seem to want us to believe. These machines are

OPERATION DEEP-FREEZE

THE IROQUOIS GOES INTO THE CLIMATIC HANGAR AT EGLIN FIELD



Before the Army puts its final stamp of approval on the Iroquois, it is being run through the toughest obstacle course ever devised for a helicopter. But the Bell HU-1A turbine-powered helicopter was designed and built to meet the Army's exacting standards of performance and maintenance . . now it is proving it.

One of the hard-fisted Army tests for the Iroquois was the cold chamber test conducted at Eglin Air Force Base and completed successfully on schedule. Here it went into the climatic hangar and its performance was checked under simulated operating conditions . . . in the deep freeze of –65°F. After test evaluations have been made, the Iroquois will go to Canada and Alaska for actual Arctic testing.

Operational tests from the arctic to the desert . . performance and stability tests . . tests under simulated battle conditions . . logistic support tests . . the Iroquois is getting "the works" to prove its worth as a front-line vehicle. Proof again that the Army gets what it asks for . . equipment "Above the Best."

FORT WORTH, TEXAS

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OF BELL AIRCRAFT
CORPORATION

BELL
Helicopter
CORPORATION

FREE—
FROM HARRIS, UPHAM & CO.—
THIS NEW INVESTMENT GUIDE...
FOR SERVICE MEN AND WOMEN

Now you can get advice on building for your financial future from a specialized service devoted exclusively to helping military personnel with their investment problems. Harris, Upham & Co.'s Armed Forces Department has supplied information and guidance to thousands of officers and enlisted men over the past three years. Staffed with former service men and backed by Harris, Upham's extensive research facilities and nationwide network of offices, this Department is uniquely equipped to offer the kind of investment help you need—whatever your financial objectives may be or wherever you may be stationed. A new revised, enlarged edition of Harris, Upham's "Military Investment Manual" has just been published, describing this service and giving valuable information on the fundamentals of investing, selecting stocks, and setting up a program of your own. Included is information on periodic investment plans either through purchase of New York Stock Exchange listed stocks or mutual funds recommended by Harris, Upham's Research Department. For your free copy of this interesting and informative booklet, clip and mail the coupon today.

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fine *tools*. They have a place in industrial mobilization, but they should have a secondary position, not a primary one, in determining what tasks our entire economic should follow.

COL. ERNEST W. POSSE
Fort Knox, Ky.

• *We believe Mr. Carasso would agree with you, Colonel. We certainly do.* —THE EDITORS.

Stellite-Lined MG Barrels

• Somewhere in the Army there must be an office dedicated to fouling up otherwise decent ideas. Among its accomplishments of past years might have been the redesign of the Mauser 98 into the '03 rifle, the adoption of that abortive device known as the Chauchat "machine gun," the introduction of the eight-round clip for Mr. Garand's otherwise serviceable weapon, and the design of the Ike jacket without high-waisted trousers to match the short length of same.

Back in 1942 the Germans issued a crude-looking MG which had a quick-changing barrel, was easy to manufacture, had a high rate of fire, and earned the wholehearted hatred of all the people who were fired on with it. The MG42 was devised from many ideas about other people's guns, but the end product was a mass-produced weapon with many good points. We attempted to copy it, but the people who did so failed to allow for the modifications needed to fire 7.62mm x 63mm U. S. rounds in an action made for a 57mm long case. Therefore it was shelved.

Now we have the M60, which bears some resemblance to the MG42, except for gas actuation and locking system. It seems to be good, but it has one feature to which I take violent exception. I think the Office of Applied Snafu (OAS) worked something into the barrel.

In past years our development of ball powder was accompanied by a length in the life of barrels. Chrome plating proved to increase barrel life greatly, and with ball powder should do better.

In view of these factors, why do we need to line the barrel with Stellite? Stellite is a good, high-speed, tool material, and in that role can make a lot more barrels to replace worn ones. In an MG barrel it does nothing that cheaper material couldn't do. Years ago the thrifty Swiss made barrel liners of old rifle barrels and produced an MG barrel almost as good as our new one. It could fire nearly 20,000 rounds effectively when as hot as ours.

We use tungsten carbide for HVAP (high-velocity armor-piercing) shot cores, because nothing else can be used so well. EOD (explosive ordnance disposal) men in Korea spent a lot of time recovering HVAP cores, and the tankers who read ARMY can verify that they had to

"TAC" . . . aerial firebreak against brush fire wars

In spite of the tremendous retaliatory action our Air Force can take in case of attack, the United States Army bears the burden of stamping out the brush fire wars which might ignite the holocaust of World War III. In this heavy responsibility our GIs are backed by the Tactical Air Command which is ready around the clock to provide the Army with the air support without which modern foot soldiers cannot survive. But fire fighting in Kansas or Korea is a dangerous business and TAC will go all out to give its pilots every protection, including Kaman H-43 local crash rescue helicopters.

PIONEERS IN TURBINE POWERED HELICOPTERS

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do a lot of explaining if they banged off an HVAP without ironclad reason.

Stellite-lined barrels may be the best to be had, but tying up such strategic material in such a way seems funny to me. The old MG42 shot 1,200 rounds per minute and the Germans made out all right with their solid-steel tubes. But perhaps OAS has once more made its masterpiece.

WO JOHN P. CONLON
Newark, Ohio.

Inflation in Promotions

● The anonymous lieutenant colonel ["No Paper Commissions," page 10, November] who replied to my Cerebration, "Bring Back the Brevet" [September] missed the point entirely. The very fact which he bemoans prompted my thought. We have inflation in promotions (that was the title of my piece when I sent it to you) and the purpose of the brevet is to put everybody on an even footing. Today we have 38-year-old Regular Army officers some of whom are captains, others colonels. This very distorted promotion picture would be aided in some cases by the availability of brevet rank.

Let me hasten to add that if Lieutenant Colonel has concrete suggestions for getting back to where rank has the prestige and meaning it had before World War II, I would be first to welcome them. However, I believe our generation is stuck with the post-WWII topsy-turvy promotion setup and for that reason I advanced my proposal.

LT. COL. H. P. RAND
Fort Leavenworth, Kans.

● It seems the Army is involved in a situation whereby we are compounding bonuses in the promotion field. The initial concept of temporary promotions was to single out certain outstanding people and promote them ahead of their contemporaries. Tempering this was the seniority factor established by using the zones of eligibility to preclude undue consideration of officers too junior in rank. This process of selection is equitable.

In 1956 another category was added to an already selective system: that of selecting "truly outstanding" officers "out of zone" for more rapid promotion than their "contemporary" contemporaries. This last is a direct duplication of what was intended in the first place. Thus, three systems have been created when the fundamental promotion list system is considered.

No one objects to pushing ahead the really outstanding officer. This creates an incentive among the officer corps on the one hand; on the other, it assures the Army of the best talent for top consideration. If this is the objective (if it isn't, it should be), there is no reason for compounding the issue of selecting and establishing a layer-cake procedure.

One solution to our self-generated dilemma is to use the basic seniority system as the standard method of selection, thus assuring the senior man of at least getting his hat in the ring. It affords the officer the opportunity of preserving his self-respect, or it gives him a clear-cut delineation of the facts regarding his status.

The objective is not lost nor is the officer placed in a compromising situation. Regardless of the attendant publicity given to selection criteria for either temporary or out-of-zone promotions (which continually indicates that no stigma should be attached to a pass-over), the fact remains that a pass-over *is* a stigma in the eyes and in the feelings of the person concerned. The loss of self-respect and the inner damage done cannot be repaired.

In any promotion system the senior man is at least *entitled* to an opportunity to prove his worth.

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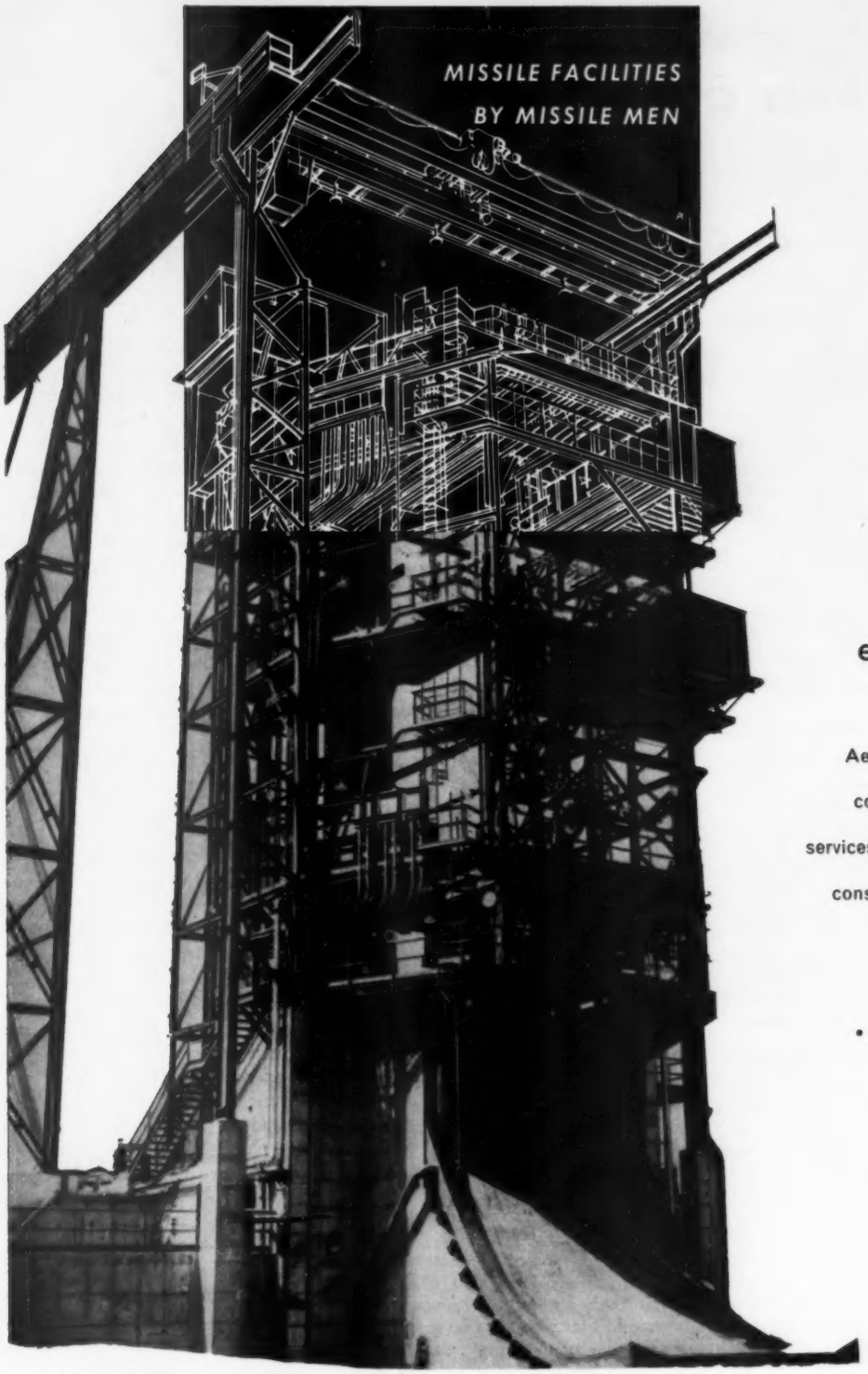

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The shortage of officers with from two to 13 years of service is receiving topside's earnest attention. The October issue of *Army Personnel Newsletter* describes the problem.

"We are not keeping the young officers that are needed for the Army tomorrow. For instance, in 1956, only 19.3% of the young reservists who completed their two years of obligated service were retained for more service under an indefinite category; in 1957 this dropped to 18.7%; this year there is a slight rise to 21.2%. These percentages are insufficient and represent only about 1,000 lieutenants who signed up for extended active duty after two years' service. What the Army needs is twice as many, or about 35% of the total."

The resignation rate of Regular Army officers makes the situation even worse. The resignation rate of the USMA class of 1955 is lower than that of the three preceding classes, but is still too high; so, too is the rate of those commissioned from ROTC and OCS.

The new pay scales have helped the situation but don't provide the entire answer. Among programs under study are more rapid promotion to temporary captain, increased readjustment pay, term contracts, a series of guaranteed service agreements, and a program of subsidized education of ROTC cadets in return for military service.

' ' '

The capability of such now obsolescent antiaircraft weapons as quad .50 machine guns and twin 40mm guns to provide covering ground fire in case of necessity is being repeated in the case of the Army's new missiles. During a press tour of Douglas Aircraft's new Charlotte, N. C., plant where Army Nike Hercules air-defense missiles are turned out, Maj. Gen. John B. Medaris revealed that Hercules has been successfully fired in a surface-to-surface mission in support of ground forces. He also said that Hercules had a range of 100 nautical miles—25 miles more than the previously announced 75 nautical miles.

As representatives of the press toured the 30-acre plant where nearly 2,200 workers are employed, Douglas President Donald Douglas, Jr., said that his company had no complaint about the Army's method of research and development of missiles. This was interpreted to mean that Douglas was divorcing itself from the supposed animosity of the aircraft industry to the Army's missile development methods.

The Charlotte plant, which went into production earlier this year, fabricates Hercules air frames and installs electronic and mechanical components produced at the nearby Burlington, N. C., plant of Western Electric Company. The five main assembly components—air frame and nose cone, main air-frame fins, booster-section fins, and booster-thrust section—are shipped from Charlotte to operational sites where they are assembled along with the warhead which is armed at the Ordnance plant at Burlington, Iowa.

' ' '

Overweight persons are going to have to watch their calories under a new medically supervised weight-reduction program currently in force at Fort Sam Houston. The program is designed to single out the heavyweights and put them on a reduced-caloric-value diet.

Dates Set for AUSA's 1959 Annual Meeting

The dates for AUSA's 1959 Annual Meeting are August 3-4-5 and the place will be the Sheraton Park Hotel in Washington, D. C. The time was moved forward from early fall in order to avoid conflict with other conventions scheduled earlier. Plans are afoot to make this, the Association's fifth meeting, the best and biggest to date. Now's the time to make your plans to attend.

NO COMMENT

HERE are recent statements by the President of the United States and the Chairman of the Joint Chiefs of Staff on the related subjects of costs and preparedness:

The President at his 5 November press conference as quoted in The Washington Post & Times Herald:

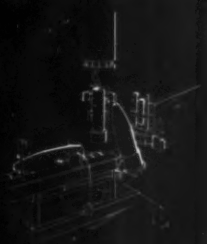
When guided missiles prove their efficiency, then certainly there must be some other kind of weapon that they are displacing. And if that is not true, then I will tell you we better go into a garrison state, because there is no other way to meet the expenses. Now that, I believe, is true, that they must not merely supplement older methods, they will have to displace [them] . . . we have got to do some good, hard-work thinking on the thing, and not just pile one weapon and one system of weapons on another and so in the long run break ourselves.

General Twining in an address before the Defense Orientation Conference Association, 19 September:

In our defense programs we are faced with two major and related problems. The first . . . is the cost in dollars. . . . New weapons become more complicated all the time and hence more expensive even without rising costs. . . .

The second problem is that we are forced to go down two roads simultaneously with regard to weapons systems. Since we must be ready to fight today or tomorrow . . . we must be prepared with the weapons of today. We cannot replace these weapons until new systems have been proved reliable but . . . we have to look to . . . the future and make every effort to be equally prepared then.

It isn't the handle that runs the machine...it's the hands that know how to run it, backed up with the engineers to plan the job, and research men to search out needed facts. In research, development, engineering, fabrication and assembly, we have the skills and facilities to do almost anything with metal. We can handle projects from every stage; either subcontract or the whole job from original conception to finished product. If you would like to put this experience to work on any of your problems, contact any ACF Sales Office or Director of Defense Products, American Car and Foundry, Division of ACF Industries, Incorporated, 750 Third Avenue, New York 17, New York. Sales Offices: New York–Chicago–Cleveland–Washington, D.C.–Philadelphia–San Francisco–St. Louis.



For instance, our experience with metals led to a new and superior method of artillery shell manufacture, the "hot cup, cold draw" method, now producing B shells for the Department of Defense.

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It's colder than you think

A wind chill table *(see below)* designed to gauge in advance the severity of the weather will be provided to army commanders in an effort to further reduce the already low incidence of cold injury among troops this winter. The table was developed at the U. S. Army Medical Research Laboratory at Fort Knox.

Results derived from the wind chill table are startling. Everyone knows it feels colder when the wind blows, but they don't know how much colder it actually is. For example, the wind chill table shows that if the temperature to be expected is about 35 degrees F. and the expected wind velocity is 20 miles per hour, then the effect on exposed flesh is the same as 38 degrees below zero with no wind—the same as being in a deep freeze.

Wind chill, one of the most important factors in the production of cold injury, may be prevented by proper use of the new table, which shows equivalent temperatures, so that when a unit commander has a forecast of the temperature and wind speed he can learn the approximate temperature equivalent against which he must protect his men.

The Army Surgeon General's Office reminds all commanders that all cold injury cases are preventable only with adequate planning. This planning should include timely issuance of cold-weather clothing and equipment, cold-weather training of personnel, and the dissemination of meteorological forecast data by all major unit commanders to subordinate commanders and staff officers.

WIND CHILL

Table of Equivalent Temperatures on Exposed Flesh at Varying Wind Velocity

Wind Velocity (miles per hour)										
45	35	25	20	15	10	5	3	2	1	0
90°	89.5°	89°	88.5°	88°	87.75°	87.5°	87°	86°	84.5°	83°
82°	81	80.5	80	79.5	78	76	74	72.5	70	60
72°	71	69.5	68	67	65	60	57	53.5	47.5	23
63°	61	59	57	55	52	44.5	39	34.5	20	–11
51°	49	47	45	42.5	38	28	18.5	11	0	–27
41°	39	36	34	30.5	25	11	0	–9	–23.5	–38
30°	28	25	23	18	11	–5	–16.5	–40	Below –40	Below –40
20°	18	14	11	6	–2	–19	–40	Below –40	do	do
10°	7.5	3	0	–6	–15	–35	Below –40	do	do	do
0°	–2.5	–8	–12	–18	–29	Below –40	do	do	do	do
–11°	–14	–18	–23	–30	Below –40	do	do	do	do	do
–21°	–24	–30	–35	Below –40	do	do	do	do	do	do
–32°	–35	–40	–40	—	—	—	do	do	do	—

Instructions for use of the table:

1. First obtain the temperature and wind velocity forecast data.
2. Locate the number at the top corresponding to the expected wind speed (or the number closest to this).
3. Read down this column until the number corresponding to the expected temperature (or the number closest to this) is reached.
4. From this point follow across to the right on the same line until the last number is reached under the column marked zero (0) wind speed.
5. This is the equivalent temperature reading. Example: weather information gives the expected temperature (at a given time, such as midnight) to be 35° F. and the expected wind speed (at the same time, midnight) to be 20 miles per hour (mph). Locate the 20 mph column at the top, follow down this column to the number nearest to 35° F. The nearest number is 34° F. From this point, move all the way to the right on the same line and find the last number, which is –38° F. This means that with a temperature of 35° F. and a wind of 20 mph, the effect on all exposed flesh is the same as –38° F. with no wind (the same as being in a deep freeze).

The Army brought its Redstone missile program to a happy ending on 6 November as another successful launching—the thirty-fourth in 37 shots—fired the sky over Cape Canaveral. The Army announced that no further Redstone research and development firings are expected. The missile is fully operational and has been on site with NATO forces in Europe since June. The closing shot climaxed a highly successful Redstone program that began five years ago, during which time the Army exploded three nuclear warheads over the Atlantic and sent three Explorer satellites into orbit as part of the Jupiter C rocket. It also marked the first time in two months that a ballistic missile was launched successfully. Earlier in the day an Air Force Thor was deliberately destroyed when its launching went awry.

* * *

"What's the word for today, soldier?" is an oft-heard question these days in the 503d Infantry, 82d Airborne Division. Each day 503d headquarters selects a phrase, usually referring to the unit's history, in an experiment in oral communication. The phrase is passed down the line to the men in the rifle companies in unofficial, oral transmission, to see how fast "the word" moves. The program tests reliance on word-of-mouth communication, common to combat conditions. It tries to determine how fast rumors could spread. It also keeps fresh famous events in the regiment's history.

* * *

"Citizen Soldier," the TV show about the Army, is picking up momentum. Several stations are giving it better time spots, which indicates growing viewer interest. Most encouraging is the acceptance the show is getting in the "tough" Chicago area where shows with a military theme are reputedly unpopular.

* * *

MSgt. Theodore L. Dobol usually knew "what was up" in the 26th Infantry Regiment, 1st Division, having spent nearly all his 20 Army years in that outfit. But the wearer of four awards of the Silver Star and five of the Purple Heart turned out to be the center of a well-kept secret. He suddenly found himself on the reviewing stand with the division commander and senior officers, as the entire 26th Infantry and elements of other 1st Division units passed in review before him. The surprise party continued with gifts—an

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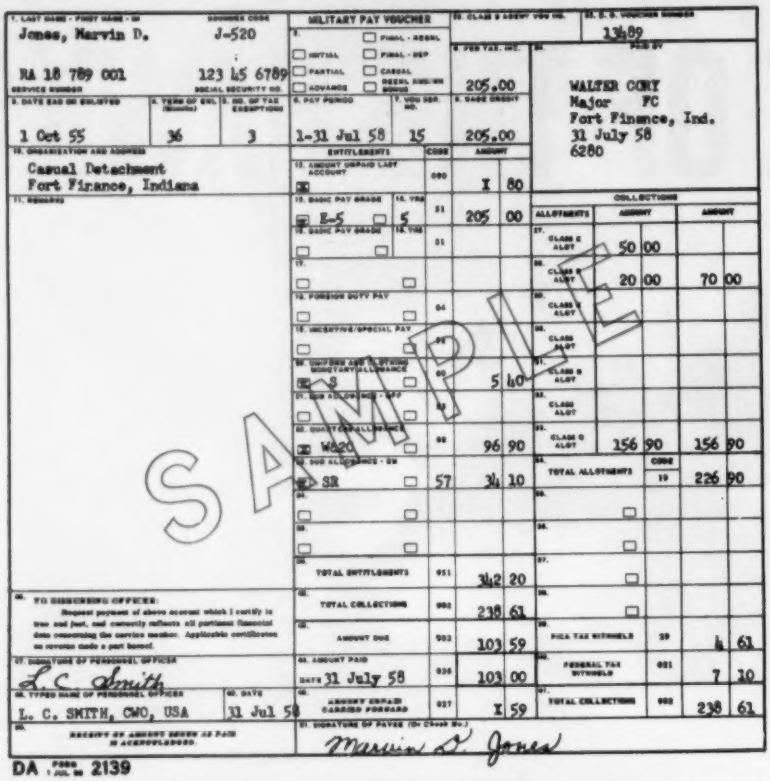

DA FORM 2139

This sample shows the voucher to be used in the Army's new pay system. Prepared by the unit personnel officer, the voucher shows all money due the soldier and all deductions. The soldier can check for accuracy himself since on the reverse side of this form are pay charts. Using electronic equipment, the new system will be faster and more accurate.

inscribed silver baton, a photograph album, a chrome-plated "pentomic foxhole digger," and a two-foot-tall cigarette lighter inscribed with his name and the regimental crest. As a final gesture, Sergeant Dobol received the Army's Commendation Ribbon with Metal Pendant from the division commander, Maj. Gen. David H. Buchanan.

* * *

"Lead time" was the chief topic of discussion at the annual fall meeting of the Army Scientific Advisory Panel. Gen. Bruce C. Clarke, CONARC CG, said the five to ten years it takes to go from concept to items in the hands of troops is too long and must be reduced if the U. S. is to maintain a constant state of preparedness to counter the Soviet world-wide threat. Lt. Gen. Arthur G. Trudeau, Chief of Army R&D, said that the need is for faster work in the field of research and development. Dr. William H. Martin, Director of Army R&D, stated that the Army is dissatisfied with the lead time required to move from one device to another in the field of weapons.

Preliminary figures on promotions during the first quarter of Fiscal 1959 (July, August, September 1958), as announced by the Army:

To Grade	*Temporary*	*Permanent*
Commissioned Officers		
General	15	5
Colonel	89	7
Lt. Colonel	300	219
Major	355	543
Captain	1,441	505
Total	2,200	1,279
Warrant Officers		
CWO W-4	72	0
CWO W-3	204	0
Total	276	0
Noncommissioned Officers		
E-8	700	0
E-7	245	900
E-6	845	1,000
E-5	6,172	2,000
E-4	27,308	0
Total	35,270	3,900

* * *

Secretary Wilber M. Brucker recently presented *Chicago Tribune* gold medallions to 87 Army National Guardsmen and Reservists from Illinois for "outstanding military proficiency." All of the 57 Guardsmen and 30 Reservists were enlisted men.

* * *

Concurrent travel and on-post housing have been assured top enlisted and officer grades upon assignment to Alaska after 1 January 1959. Master sergeants in grades E-8 and E-9 and officers in grades of lieutenant colonel and higher have been included in the new plan. Army posts in Alaska to be included in the program are Fort Richardson, Port of Whittier, Fort Greely, Wildwood Station and soldiers stationed at Ladd and Eielson AFBs.

* * *

Officer shortages continue to exist in several Army branches and transfers to fill these vacancies from overstrength grades in various branches will be encouraged.

The Adjutant General's Corps, Artillery, and Chemical Corps are short majors, captains and first lieutenants; the Corps of Engineers needs lieutenant colonels, majors and captains; the Finance Corps can use lieutenant colonels, majors and first lieutenants; majors and first lieutenants are short in the Military Police Corps, and Ordnance and Signal need first lieutenants through colonel.

* * *

A $5 million system to provide immediate missile flight performance information for rocket and missile testers is in the initial contracting stage at the White Sands Missile Range in New Mexico.

The plan, two years in development by the Electronic Trajectory Branch of Range Instrumentation Division, consists of an integrated trajectory complex designed to combine into one instrumentation facility the measurement capabilities which now require several systems to provide. It will also include other features not now provided by the range.

The completed system will track multiple targets and present data on each target for analysis during the flight. Complete velocity, acceleration, and position data from each target, as well as miss-distance will be obtained from ITS (Integrated Trajectory System).

The new system will enable range users to obtain flight performance data almost immediately after a missile flight.

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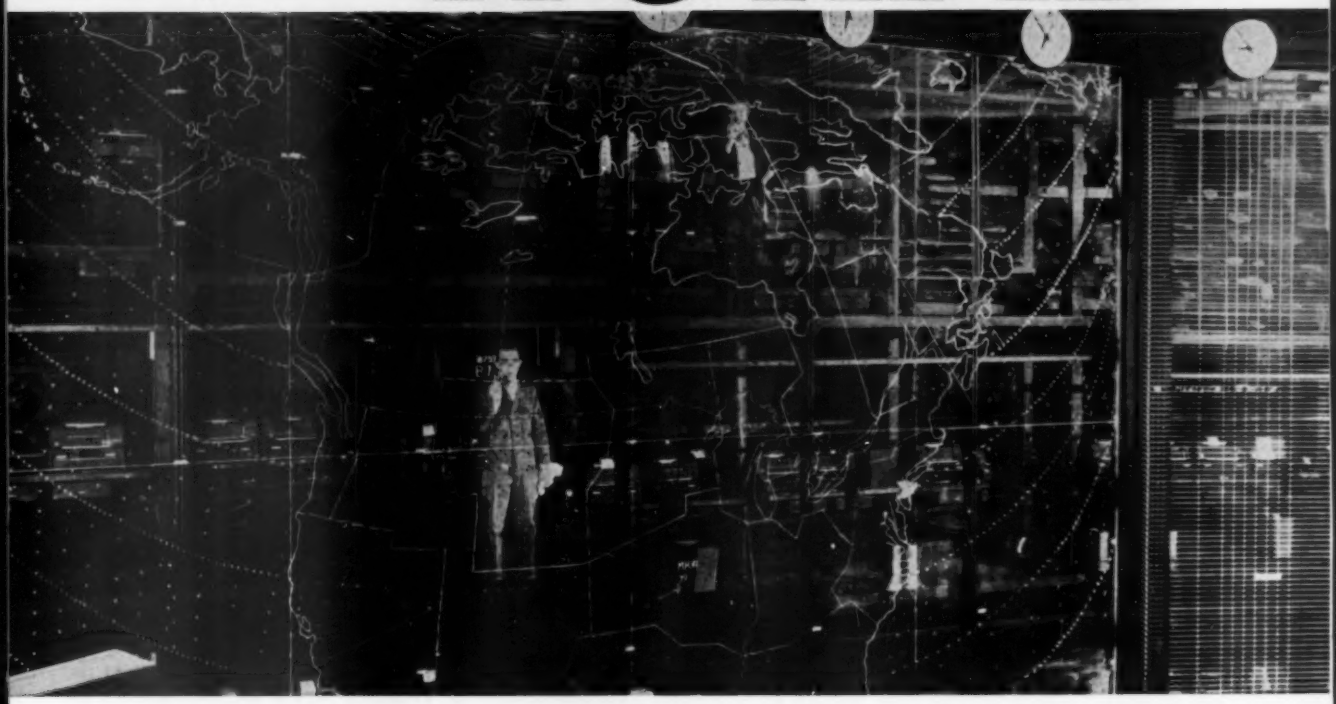

Headquarters—NORAD—Colorado Springs

Like a huge "bumper" wrapped around the North American continent and reaching down along both the Atlantic and Pacific shores, the North American Air Defense Command (NORAD) has been created for operational control of air defense units of the Army, Navy and Air Force of the U.S. and the RCAF Air Defense Command of Canada. Its field includes the vast area between the southern border of the United States and the northernmost limits of Canada and Alaska. Under the functional control of NORAD will be BMEWS (Ballistic Missile Early Warning System) and SAGE (Semi-Automatic Ground Control Environment) for the defense of specified sectors. In addition to its responsibility as prime contractor for BMEWS, the Radio Corporation of America is working on other important electronic assignments for NORAD.

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CAMDEN, N. J.

EDITORIAL

INCITEMENT TO RESPOND

GENERAL Twining's provocative talk before this Association's Annual Meeting (the text is on page 42) was a frank expression of the views of the Chairman of the Joint Chiefs of Staff on the Army's role today and tomorrow. Being provocative it stimulated response —as all good speeches should. Incitement to respond usually means disagreement and General Twining said he was aware that there were valid differences of opinion on several of the subjects he touched on.

He didn't say that the Army was large enough. What he did say was that "we must face up to the fact that the personnel strength of the Army, and the Armed Forces as a whole, is not likely to increase." The use of the pronoun suggests that perhaps the Chairman of the Joint Chiefs of Staff himself, has some reservations about the declining strength of the active Army and that the decision had not been of his making.

He didn't say there was plenty of airlift. He did say he would like to see "more and better airlift" but that he had to accord it a lower order of priority than others would.

On this airlift problem, it is interesting to note that General Twining in discussing limited war emphasized that the United States would fight on its own terms and not the enemy's and that it must be "able to apply the necessary degree of force at the point of tension quickly and decisively." This necessary degree of force, he said, could vary "from a single warship or marine battalion to several Army divisions and air force wings." Just how several Army divisions could move "quickly and decisively" with the present paucity of strategic airlift is a question begging for an answer. Merely discounting its priority isn't enough.

THE portion of General Twining's talk that was really painful was his criticism of what the Army is doing to improve its tactical and strategic mobility. Some of his criticism suggests that he isn't quite as familiar with what the Army has been doing in these fields as he implied he was.

Certainly he will find no argument in the Army over his opinion that the Army should be a "compact, mobile, hard-hitting outfit with a minimum of supporting impedimenta." These desirable attributes have been emphasized by every Chief of Staff and senior commander within memory and especially within post-World War II years.

His criticism of "protective measures such as heavy armor on tanks" suggests that he isn't aware that many influential voices in the Army have been discounting armor protection in favor of firepower and speed for many years.

His criticism of the lack of mobility of Redstones, Corporals and Honest Johns is unfortunate. No one has said they are the ultimate in mobility, but they are incontestably the most mobile land-based missiles the United States possesses today. His criticism may suggest to some that the Army isn't interested in the mobility of missiles. This is 180 degrees wrong. The Army has always insisted that its missiles be as mobile as the state of the art permits. To compare the mobility of these early generation missiles with what is desirable or may ultimately be possible is to compare the speed and maneuverability of a lumbering B-36 bomber with the speed and maneuverability of the experimental X-15 rocket-powered spacecraft.

AN overwhelming majority of the voting delegates at the Annual Meeting made it clear that they appreciated General Twining's frankness, without necessarily agreeing with him. That squares exactly with the opinion of the editors of AUSA's magazine.

We have, in turn, been frank in our discussion of some of the things General Twining said. And to conclude in the same spirit of frankness we would like to say to the Chairman of the Joint Chiefs of Staff that while we appreciate the complexities of the many grave problems he has to grapple with, we think there are some questions that need new answers.

We ask if the time hasn't come to call a halt to the constant nibbling at active Army strength and to rebuild it materially.

We ask if the time hasn't come for the nation to realize that it cannot afford not to have sufficient modern airlift instead of saying it cannot afford to have it.

We ask if the time hasn't come to insist that sufficient funds be given the Army to reequip it with the modern weapons and machines that will give it the battlefield mobility we are all agreed it should have.

We ask if the time hasn't come to recognize that the Army will have a continuing need for surface-to-surface and surface-to-air missiles and to realize that constant harassment and criticism of the Army's proved missile development facilities are not in the public interest.

We ask, in short, if it isn't past time for the nation to have a constantly improving, modern, hard-hitting Army large enough and strong enough to perform its assigned missions.

The alternative to an affirmative answer is written in history. Two of the words are Bataan and Korea.

SPERRY INTRODUCES...

New portable radar safety meter for survey of microwave power fields

Like many technical developments, the high-power microwave systems now coming into wide military use present an unexpected problem. Medical and military leaders alike are concerned with the safety of personnel working with these "super radars" which generate tremendous microwave energy fields in their transmitters and antennas.

Current information indicates the surest methods for establishing safe working conditions near powerful microwave devices involve survey measurements of microwave power density in the area. But, until now, application of this principle has been restricted because engineers have lacked suitable portable equipment for making these measurements.

As a leading producer of advanced radar systems, Sperry has devoted extensive research to the problem of assuring safety in their operation. Result of this investigation is the new Microwave Power Density Meter. Weighing only 6 pounds, the meter provides a simple but highly accurate method of exploring the existence of concentrated energy or "hot spots" close by high-power microwave antennas, transmitter tubes and plumbing. It is completely portable and contains its own power supply.

Utilizing the presently accepted safe energy level of 10 mw/cm^2, the Sperry meter quickly registers the relative power density above or below the acceptable level. The meter is scaled to read in mw/cm^2. A single knob operates the meter, permitting its use by nontechnical personnel.

If you'd like more information about the new Sperry Microwave Power Density Meter, write for Microline 646 data sheet.

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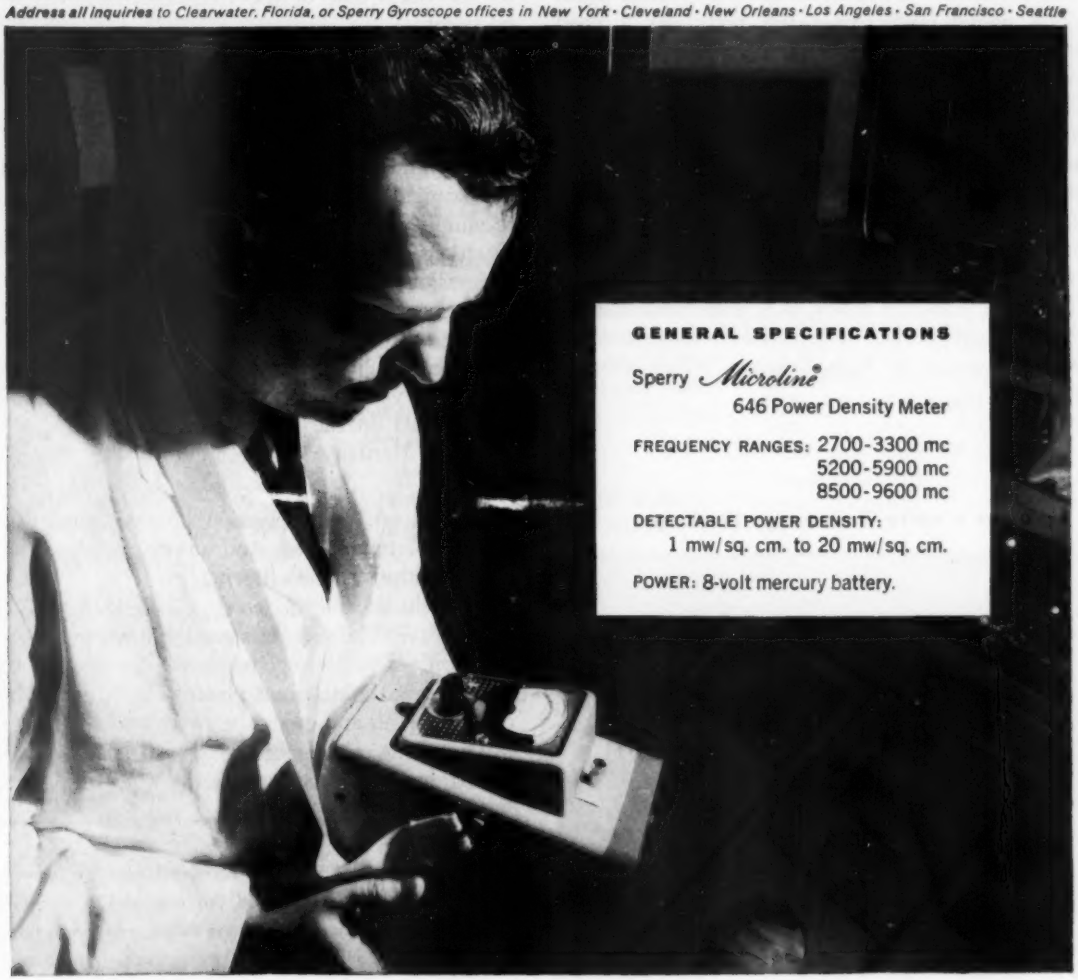


Christmas Tree Defeat

General Bruce Clarke's Blackest Yuletide

Brig. Gen. S. L. A. Marshall

AT Christmas time there is always one more untold story about the ordeal of men in war. Old soldiers are by nature sentimentalists. As years go by, they may forget old barricades. But what happened on Christmas stays imperishable in the memory.

General Bruce Cooper Clarke will have a home Christmas at Fort Monroe this year. Is it more blessed to be Chief of CONARC or to know Christmas again in one's native land? Amid the holly, it's a good question.

Last season Clarke was commanding Seventh Army in Germany, the hard core of Western defense, the most fit army in our history. We were together at his home in Stuttgart of an evening when carolers were abroad. By the fire, he became reflective, saying, "Let me tell you about my blackest Christmas."

Here's the story.

Clarke's own bright star rose during the Battle of the Bulge 14 years ago when, as a brigadier leading a combat command of the 7th Armored Division, he made the six-day stand at St. Vith, Belgium, which wrecked Hitler's plan.

It was a white Christmas in the Bulge

St. Vith had no time for Santa Claus, though there was much last-minute shopping for any kind of hardware that would shoot.

Two days before Christmas the enemy pressure so built up that Clarke knew he had either to seek new ground or be destroyed. By Christmas Eve his combat command was again in line in rear of the Salm River on the north side of the Bulge. Temporarily, it felt no sweat.

Then, at 1000 hours on Christmas Day, Major General Matthew B. Ridgway, the corps commander, directed Clarke to attack that afternoon and seize the German-held town of Manhay. Seated in a quite narrow, well-farmed valley, Manhay was 1,500 yards away. Clarke held higher ground to the north. At noon he reconnoitered the roads and found there were no obstructions between. The enemy had left the door open. The task would not be too difficult.

Clarke set the attack for 1400 hours. Twin roads leading through heavy forest ran to the objective. One battalion of heavy armor would assault via the left road. An infantry column, helped by tanks, would advance by the road on the right, while all available artillery plastered Manhay.

ALL was set. The operation became mounted. The two columns started. And no one grumbled—at least no one within Clarke's hearing.

From the edge of the woods, Clarke could look down on Manhay. The view was good, but not good enough. With only minutes to go before the fire opened, Clarke took off in a light liaison plane so that from above he could see it all and enjoy the sweet smell of success.

The plane made altitude and leveled off. Clarke looked down. It was time for the fireworks. But what

---

Brigadier General S. L. A. Marshall, USAR, is well known to our readers. He conducted the after-action interviews of officers and men who fought in the Bulge, and wrote *Bastogne: The First Eight Days.* His *Sinai Victory,* the only account of the Israeli-Egyptian 100-hour war, was published last month. General Marshall is an editorial writer of *The Detroit News.*

COUNT DOWN!

for the conquest of space

IS THE ROCKET ENGINE MAN'S ONLY WAY TO OUTER SPACE?

Strapped and cushioned against the relentless grip of acceleration, a man lies supine and helpless as his crew of robot devices controls the upward drive of his ship. He watches the firing seconds tick away—300 ... 450 ... 600—until suddenly, both sound and acceleration stop simultaneously. In that second all weight ceases.

He is in Outer Space.

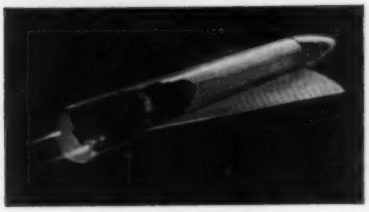
The only power that can put him there today is the large rocket engine. No matter how far and how fast space travel develops, these high-thrust engines provide one basic essential—the sheer brute force that can lift a payload from the surface of the planet to the airless void outside.

Endurance for vast distances

Once space is reached, a wealth of intriguing possibilities beckons. Entirely new aspects of propulsion are being developed to maneuver ships between the moving gravitational fields of Earth's neighbours in the solar system.

PACKHORSE OF SPACE. *Only means to put stores or people out beyond atmosphere is the big, high-thrust rocket.*

One advanced propulsion system that may be built soon is an ion rocket. This ultra-high-specific-impulse power plant provides low thrust for extended periods.



OUTWARD BOUND, *man's robot reporter heads off to a rendezvous with planet Mars.*

An endurance of months, or even years, is possible. Mounted in a suitable unmanned vehicle, such an interplanetary "private eye" would make the cislunar region seem like our own front yard. It could be sent off to reconnoiter the mysteries of Mars, Venus, or the Asteroid Belt.

Rockets ready today

To date, the vast bulk of successful missile and space projects in America have used Rocketdyne engines—Atlas and Thor for the Air Force, Jupiter and Redstone for the Army, the historic Explorer satellites, and the all-important first stage of the lunar probes. And Rocketdyne continues to improve the techniques of rocket engineering. High-energy fuels—storability—a full range of proven engine designs: these are some of the contributions Rocketdyne has made to weapon system operation for our nation's defense.

Million pounds of thrust

Rocketdyne is now at work on two approaches to propulsion systems that will deliver thrusts up to 1,500,000 pounds. One is a single-chambered engine, the other a grouping of engines adapted from the Thor-Jupiter engine family. From these will stem the multi-million-pound-thrust systems that are essential to launch the manned exploration of interplanetary Space.

FIRST WITH POWER FOR OUTER SPACE

ROCKETDYNE

A Division of North American Aviation, Inc.—Canoga Park, California; Neosho, Missouri

the command eye saw baffled understanding. Clarke's two assault columns were at absolute standstill 1,200 yards short of Manhay.

By radio, he could talk to the two battalion commanders. What had befallen the column on the left was starkly apparent. Debouching from the woods into an open field, the armor had run onto a minefield covered by six inches of snow. Three tanks had blown up. The others couldn't get by.

Why the column on the right had also stalled remained momentarily mysterious. The battalion commander was too far back to know the reason. All he could say was: "General, something's stopping them up front, but I don't know what. I can't see it and I'm not hearing anything."

The light plane headed that way. It's a neat picture: a general on wing serving as his own first scout. From a few hundred feet up, Clarke looked down. Then he knew.

Just before breaking into open country the lead vehicles had entered a narrow gorge and there become blocked. The view left no need to reason why. Ahead of the front jeep, across the road in a neat row, were 27 giant fir trees of a size to grace any city hall's lawn during the holidays. To remove them would take hours. The attack had to be called off.

CLARKE flew back to his command post reflecting on the irony of being whipped by a line of felled Christmas trees on 25 December. It probably hadn't happened to any other soldier since Julius Caesar set up the calendar.

His explanation didn't exactly appease General Ridgway. The road had been reconnoitered and declared clear two hours earlier. Front-line Germans simply can't cut trees that fast. Had the scouting party failed its mission?

That night, pondering his classic defeat, Clarke couldn't eat his delayed turkey dinner. Instead, he took pen in hand. His letter to his wife started, "It's the blackest Christmas I've ever known."

At that point, a staff sergeant said to him: "Hey, General, come look. The stars are out. It's Christmas—well, Merry Christmas!"

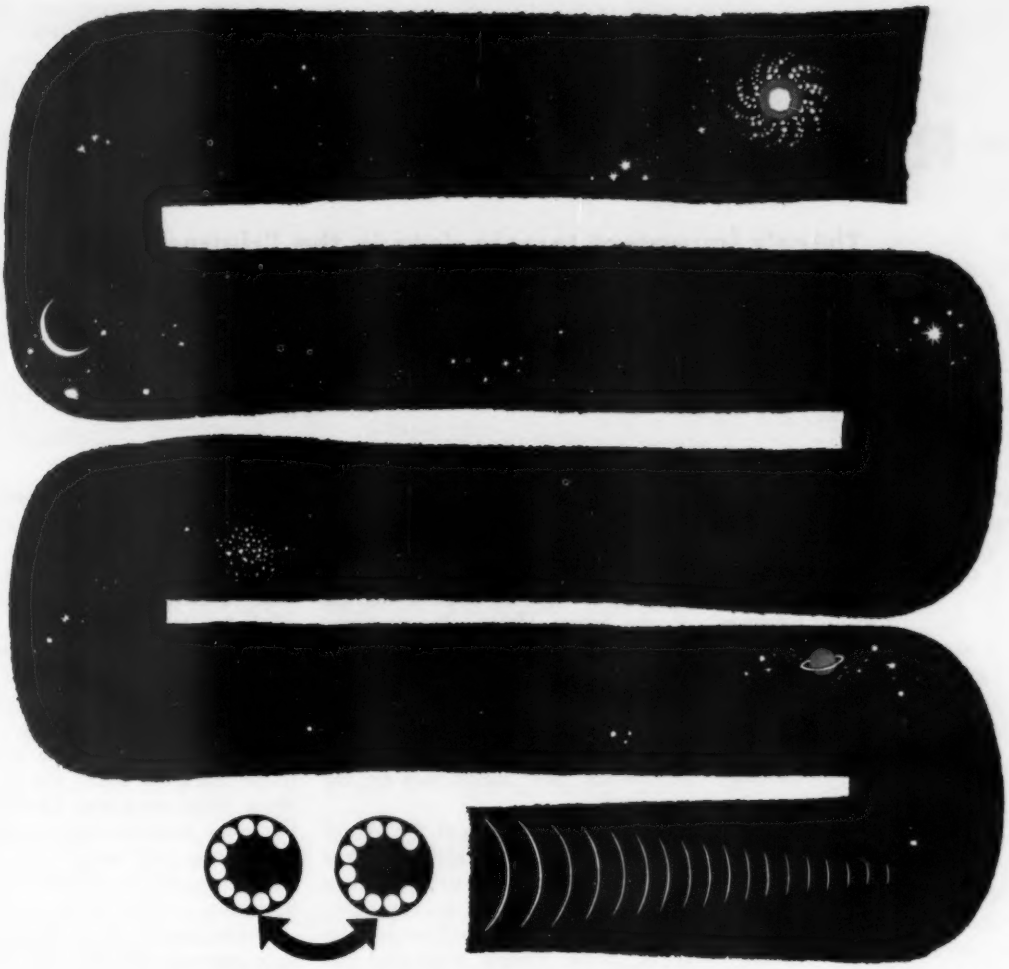
While the youngster's bubbling goodwill restored his sense of proportion, the mystery of his failure continued to rankle. He resolved to learn how the thing had happened. Weeks later he had the puzzle solved.

The fatal minefield, it turned out, had been laid by Americans who, holding the ground earlier, had failed to record their work.

As for the trees, the commander of the U. S. division on his right had been worrying about his own flank. A half hour before Clarke's columns started, a platoon of engineers from this outfit had moved across Clarke's front with powered saws and felled the forest slick as a whistle.

Quite a gift for one man's stocking!

The left column bogged down when armor hit a snow-covered minefield



FROM INTER-OFFICE TO OUTER SPACE...

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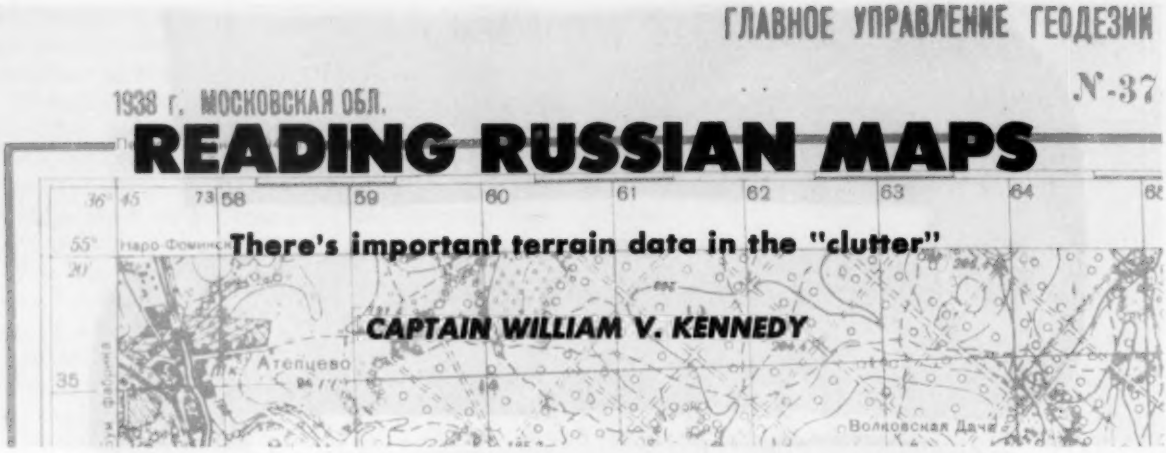


READING RUSSIAN MAPS

There's important terrain data in the "clutter"

CAPTAIN WILLIAM V. KENNEDY

THE demands of atomic warfare, the vast expansion of the battlefield, and the consequent demands of modern war upon the small-unit leaders and the individual soldier make it essential that we be prepared to use whatever friendly or enemy equipment and material that may come our way.

Nothing could be more vital in this regard than a knowledge of the Soviet military map.

Prior to 1917, and the Revolution, maps of Russia were scarce, of varying quality, and based upon as many as three different prime meridians. Since then, the Soviet General Staff has completed an accurate, standard mapping program that covers most, if not all, of the Soviet Union. By necessity, these maps must be distributed down to the lowest troop and police levels. They become important intelligence "targets," not only because of information that may be sketched upon them, but for the basic information on the map itself.

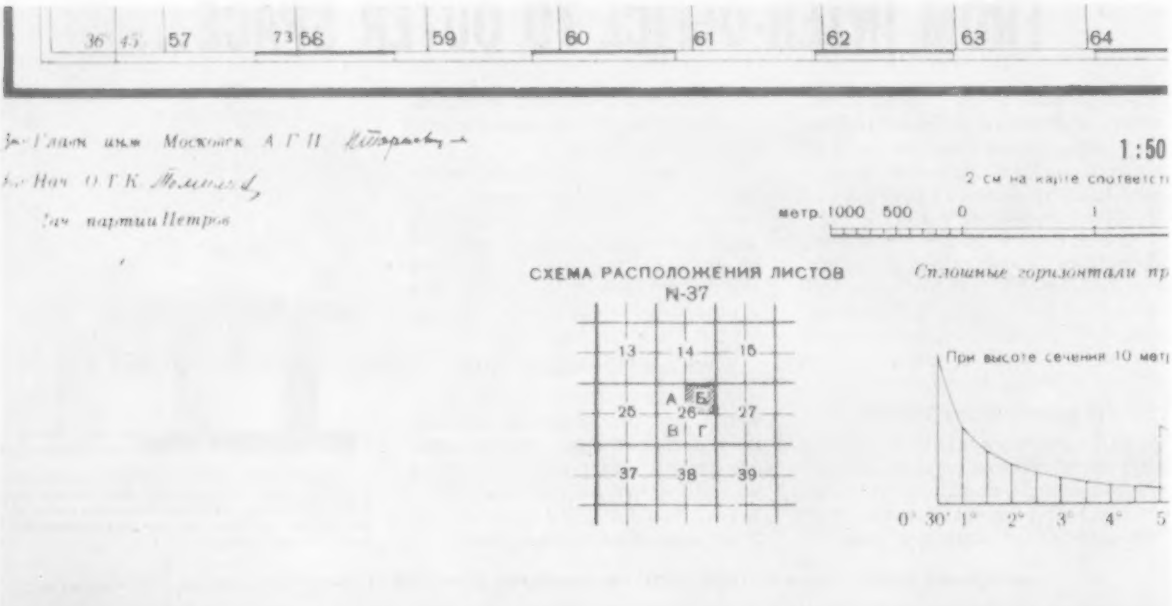
Thanks to the efforts of the World War II German Army and our Corps of Engineers, there are sufficient Russian maps available to make possible a thorough training program for the U. S. Army. Sample maps and the publications to support such a program are available through normal supply channels.

In some cases, it has been possible to overprint these maps with translations of marginal data and to include an index to symbols. Even without such aids, however, the small-unit leader, or the individual evader or escaper who manages to get hold of a Soviet map can navigate accurately.

In a rather remarkable concession to the bourgeois world, the post-Revolution maps recognize Greenwich as the prime meridian and, consequently, fix latitude and longitude as we do. The geographic coordinates are shown in all four corners of the maps.

Colors used on Soviet military maps have approximately the same meaning as ours: blue for water, black for man-

Captain William V. Kennedy, free-lance writer and member of the 104th Armored Cavalry, Pennsylvania National Guard, has also served in the USAF and the Air National Guard.



Top and bottom portions of a Russian map, scale 1:50,000

made objects, contour lines in brown. The Soviet military grid system is printed in black. On maps of 1:100,000, and smaller, grid lines are spaced two kilometers apart, thus providing a quick method of determining distance. On maps larger than 1:100,000, grid lines are spaced one kilometer apart.

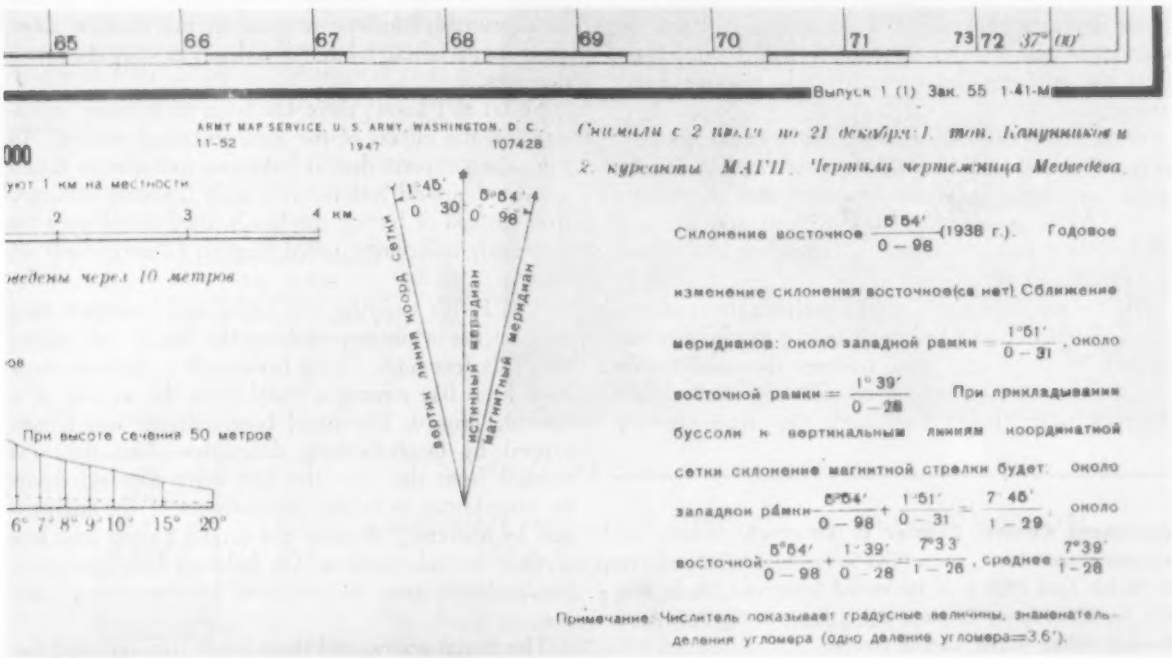
The Soviet grid system reads opposite to our own: up and right rather than right and up.

Marginal data on the Soviet maps are similar to our own and are easily identified despite the Russian wording. Principal details provided are contour interval, a diagram with an arrow for magnetic north and pointers for grid and true north, a useful scale for determining the degree of ground slope, and an index to adjoining sheets.

At first glance, the Soviet military map is extremely hard to read because of a wealth of detail, or "clutter." Upon closer examination, however, it will be found that the apparent clutter provides vitally important terrain data.

Arrows placed along stream beds indicate direction of flow. On some large-scale maps these arrows are accompanied by a numeral to represent rate of flow in kilometers per hour. Fords, as well as bridges, are marked, accompanied with figures showing average depth and type of bottom. Houses with walled or fenced yards are marked as such. Forests are identified as deciduous or evergreen, or as a combination of both types. Average height of trees can be determined from the same symbols. Numerals under the name of a town represent the number of households, though not the exact population. Dotted lines locate the extensive system of fire lanes—important avenues of cross-country movement—first hacked through the forests by Peter the Great.

There is but one final deterrent to Soviet aggression, and only one final answer to such aggression if it does come: the threat of an Allied counter-attack on the ground, into the vitals of the Soviet empire. An essential part of that final deterrent is the creation within the mind of the individual soldier of confidence in his ability to fight and to win in the USSR, against the Soviet Army. The ability to make effective use of captured Soviet maps can be an important element in instilling that confidence.



Plan Beyond the Assault

The battlefield inexorably punishes those who fail to heed the obvious

LIEUTENANT COLONEL CHARLES R. CAWTHON

THE only boat landing teams to cross the western (right) regimental sector of Omaha Beach without crippling losses on the morning of 6 June 1944 were those that touched down in areas where smoke from brush fires blinded the German defenders. Contemporary and later accounts of combat in Normandy also attest to the frustration of infantry and armor attack by the hedgerows of the *bocage* country.

While these incidents are well documented, I have noticed no great amount of interest in *how* they came about. Why did the Omaha assault—one of the most carefully prepared in military history—depend upon the feeble chance that smoke from brush fires would save its initial waves from decimation in one critical sector? Why were our infantry and armor, so carefully trained for the invasion, surprised by the difficulty of fighting in the hedgerows?

I think these two points offer some interest and lessons on the fallibility of all planning.

The text of the plan for the Omaha assault comprised some 300-odd legal-sized pages and twenty-three maps and charts—the end result of two years of planning and revision. The full text not being available, I cannot give the reasons for the failure to plan to use smoke to blind the occupants of known fortified zones from the assaults of our leading infantry and tank outfits and from the engineers who cleared paths through beach obstacles.

Since the possibility of using smoke could not have been dismissed entirely, the decision against its use must have been based on the belief that the weight of the Allied preparatory bombardment and fire support made it more important to have clear observation of targets.

To the pre-atomic soldier, the preliminary bombardment which started a half hour before touchdown was indeed awe-inspiring. Some thirteen thousand bombs (1,285 tons) were dumped on the immediate beach defenses by 480 B-24s. Two battleships, three cruisers, eight destroyers and various lighter fire-support craft were told off for area fire and specific targets. Thirty-two tanks and thirty-six 105mm howitzers of the two supporting armored field artillery battalions would fire over the ramps of their LCTs while approaching the beach. The *coup de grâce* would be administered by nine rocket LCTs each firing one thousand HE missiles when the leading assault wave was three hundred yards from the beach. Ninety-six tanks were to land just before H-hour for direct support of the infantry.

All this to prepare the way for two regiments attacking on 3,000-yard fronts, each with two battalions abreast. On paper, that adds up to annihilation for the defenders and a pushover for the attackers. Calculating the strength of a defense on paper is helpful and necessary, but only rarely can we accurately forecast what will happen when the plan is executed.

What did happen

To briefly recapitulate what did happen: First, the overcast forced our flyers to bomb by instrument (to the doughboy, the reasons why an airman can't fly low enough to see the target as he sees it at ground level are always obscure). The safety factor added because of instrument-bombing resulted in the thirteen thousand bombs falling inland, completely missing the beach defenses.

So far as I know, there has been no accurate assessment of the effects of the nine thousand rockets. An eyewitness reports that at least one rocket craft tossed its one thousand rounds with such uncanny accuracy that, instead of hitting the beach, they roiled up a bit of already sufficiently roiled English Channel well off shore.

The LCTs carrying the tanks and howitzers that were to fire while approaching the beach rode waves up to six feet high. Firing from such a platform must have been like aiming a pistol from the topside of a bucking bronco. The naval bombardment was handicapped by target-locating difficulties. This fire was masked from the time the first wave touched down by uncertainty as to the whereabouts of the infantry and by scattering of naval fire-control parties and loss of their communications. On balance the preparatory bombardment must be considered less than a huge success.

The initial waves, and those tanks that survived the

Lieutenant Colonel Charles R. Cawthon, *Infantry,* an occasional contributor, wrote "This Seems to be Where I Came In" in our April 1958 issue. He served throughout World War II in the 29th Infantry Division, and is now with the U. S. Army Element, Allied Forces, Central Europe.

...speaking of

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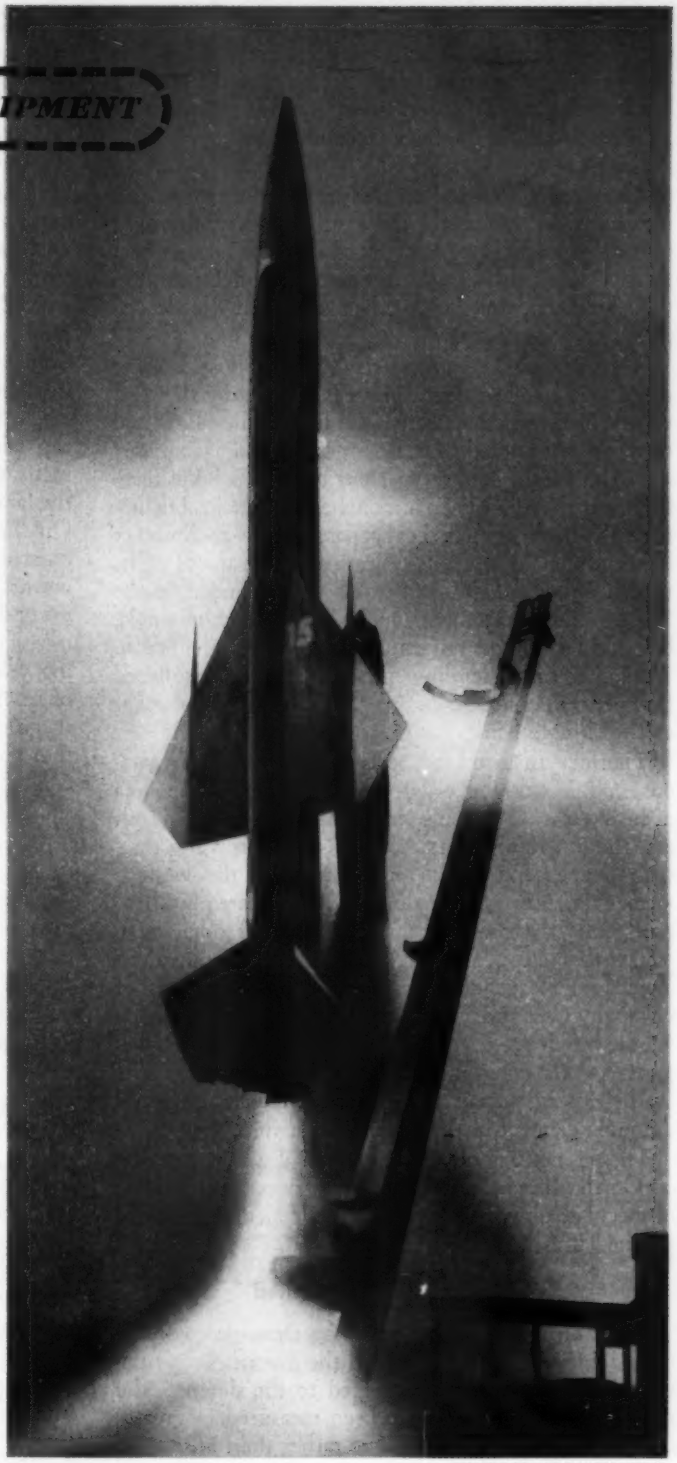

Operated by the Air Defense Command, a Boeing Bomarc climbs skyward from its launcher. FMC is building ground support equipment for this supersonic missile.

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Putting Ideas to Work

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rough passage to precede them, landed under the guns of the defenders who may have been unnerved by the sight but who were certainly not destroyed. The defenders had, in fact, been unexpectedly reinforced by a division that our intelligence believed was miles away in reserve.

The results bordered on disaster for the two assault regiments. In the case of the 116th Infantry, the right (west) regiment, I am convinced that the margin over disaster was provided by the smoke from brush fires (the kind that are the dread of suburban fire departments) on the bluffs.

The contrast in experiences of those boat landing teams that touched down in areas covered by the easterly drift of the smoke across the face of the bluffs and of those that landed in the clear is startling. Company A of the 116th, landing in front of the Vierville fortified area that had been untouched by smoke but apparently had gotten a heavy part of the preliminary bombardment, lost all its officers and two thirds of its men. Of Company F's six teams which landed in the Les Moulins area, three touched down in the smoke belt and had almost no casualties in crossing the beach. The other three, landing outside the smoke, suffered fifty per cent casualties before reaching the partial cover of the shingle bank.

The first units to land nearly intact and with weapons in fair working order came in through the area of heavy smoke. These were Company C of the 116th and the 5th Ranger Battalion. It is not surprising that, with one exception, the penetrations in the western sector's defenses were made in the smoke area by these units and by those boat landing teams of other companies that got across the beach without being decimated. The exception was provided by remnants of Company C of the 2d Rangers and Company B of the 116th, which got up the cliffs to the right of Vierville. Their efforts could not be exploited because of the deadly fortified zone between their penetration and the main element of the initial assault force.

There is nothing new in this recital of what happened on Omaha Beach, but the review is necessary in order to speculate on what might have happened had the unplanned brush fires not started.

What might have happened

Based on after knowledge of the strategic combinations achieved by the Allies and the overwhelming potential of the attack as compared to the defense, the results would probably have been measured in greater casualties and more loss of time rather than in over-all success or failure. Sooner or later, communications would have been established between the warships and their shore fire-control parties. The naval guns would have blasted out the defenses as their fire uncovered them. This happened at the Vierville beach exit fortifications between 1200 and 1300—some four hours after the initial assault troops had begun to penetrate inland under concealment of the smoke.

As the defenses were breached in strength at no other points on the western beach than in the smoke areas, we can assume that, had it not been for the brush fires, the assault would have remained on the beach longer and casualties would have mounted proportionately. As it was, though the 116th suffered some one thousand casualties, it fought for the next three days before getting two days' respite. A delay on the beach lengthened by even one hour might well have left the regiment unfit for further action. The reserve regiments, instead of getting inland through the penetrations, might have had to make a beach assault on the evening of D-day through the gruesome remains of the first one.

On the other hand, what would have resulted had the defenses been deliberately blinded by smoke directly after the preliminary bombardment, and before the landing craft started their final run into the beaches? On the basis of what did happen, it is reasonable to assume that casualties would have been materially lighter and that the assault, deriving the cumulative benefits of landing intact units, would have had some chance of reaching its D-day objectives. Besides, had each landing team's beach area been marked by its own color of smoke, the teams would have been much more easily guided. Certainly a technical and industrial economy that produced the proximity fuze and the atomic bomb could have turned out naval shells that fired colored smoke.

Tactical advantage of smoke

Ever since this experience with the relative effectiveness of assaulting a blinded defender rather than an all-seeing one, I have reflected on the use of tactical smoke. Possibly the ideas that have emerged have not occurred to others.

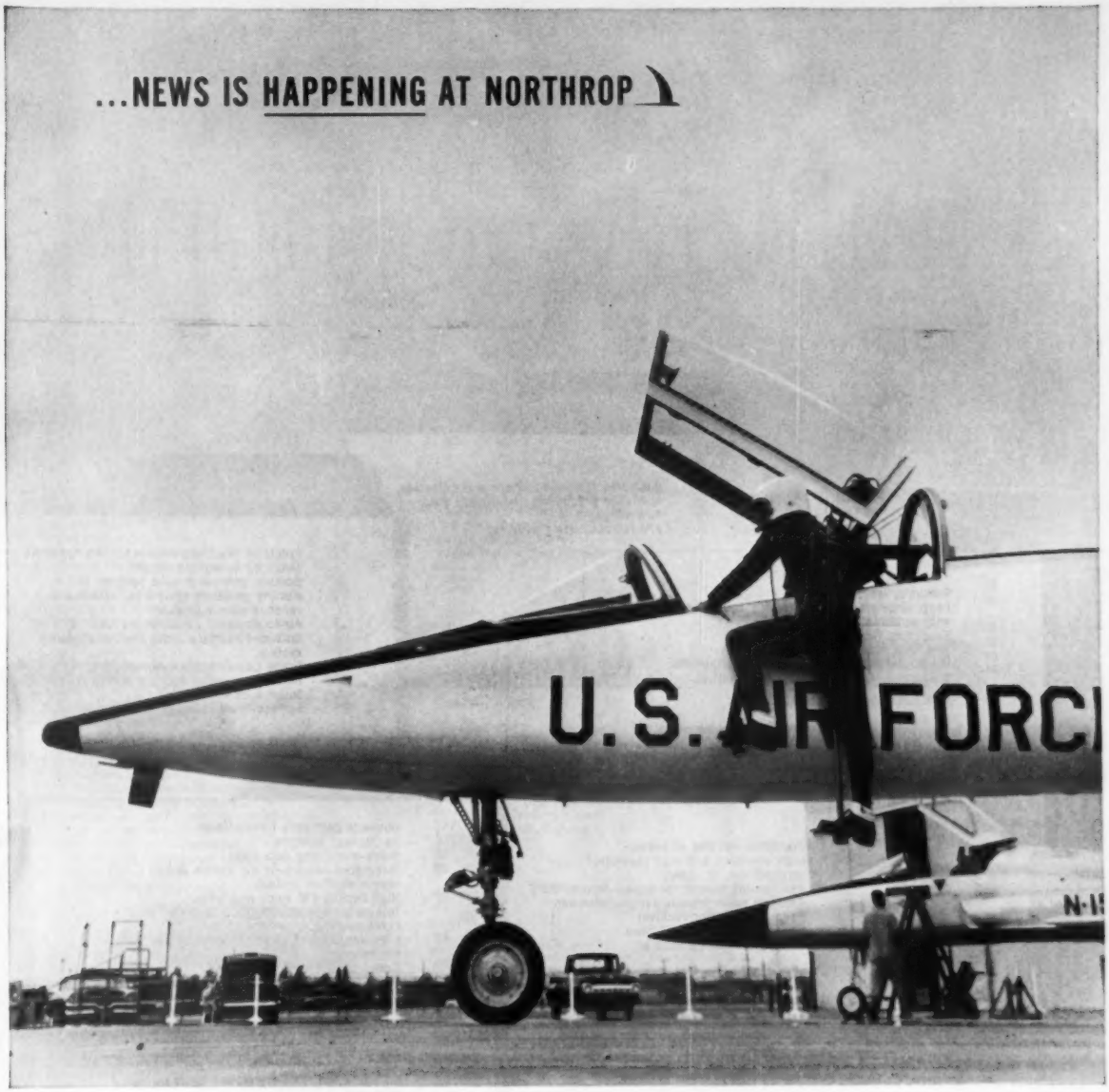
In closing with an enemy in prepared positions, the attacker can expect to gain by blinding the defender with smoke and thus concealing his own movements. To suppose that you may obscure a target by so blinding the enemy defenses is fallacious. We can assume that preparatory fires will already have been registered on targets, so that the presence of smoke will make no difference. Targets of opportunity are not likely to appear until a vigorous attack closes with the defense to create them.

Perhaps you are unwilling to use smoke on the objective because of what the defender may do inside the smoke. Or perhaps your inclination is to keep him in sight in order to conform with his moves rather than a decision to close and force the enemy to conform to your action.

Tactical smoke offers the commander of even the small unit a way to accomplish that bold and rewarding maneuver: gaining the initiative by disappearing from the enemy's view until ready to close with him in a final assault.

A count of word frequency in descriptions of the battle of Normandy would probably find "hedgerow"

...NEWS IS HAPPENING AT NORTHROP



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The twin-jet T-38 pioneers a new Northrop family of low-cost, high-performance aircraft. Another member, Northrop's N-156F NATO-SEATO counterair fighter, is now being built at Hawthorne, California. Final mockup of the N-156F is shown in background of above illustration.

Both aircraft are evidence of Northrop Division's skill in creating and producing higher quality products at lower cost. With other current projects, the T-38 and N-156F illustrate a new kind of cost-conscious creativity—are results of Northrop's budget-minded management team, the unique Performance and Cost Evaluation Program called PACE, and of Northrop-developed production techniques.

NORTHROP
HAWTHORNE, CALIFORNIA
A Division of Northrop Aircraft, Inc.

military electronics

ASW AND UNDERSEA WARFARE

SE	Submarine communications and detection.
SE	ASW data processing and display aids.
PP	ASW listening and retransmitting devices.

SPECIAL DEVICES

SE	Proximity warning.
SE	Long range electronic surveying equipment with airborne repeater.
DS	Electronic fusing.
DS	Electronic surveying equipment.
DS	Pulsed light range measurement equipments.
PP	Radiosonde transmitter and preamplifier.

MISSILE AND DRONE CONTROL

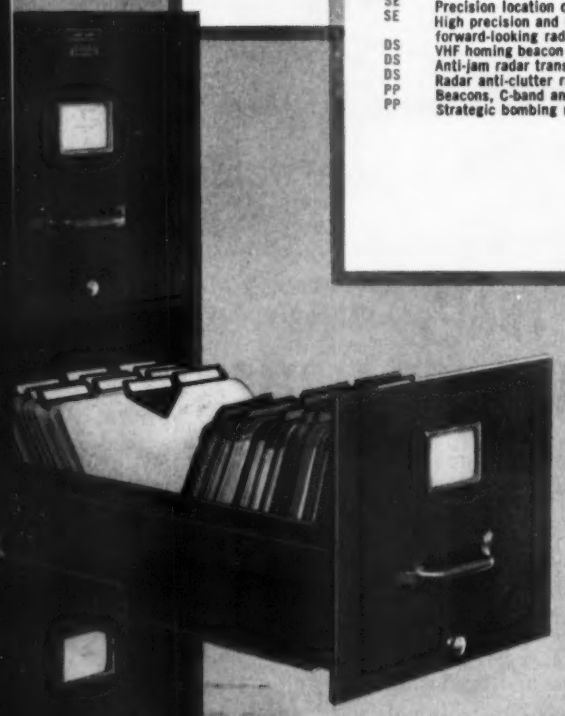
SE	Precision inertial-guidance system for short range air-to-surface missile.
SE	Bomber defense missile system.
DS	Homing guidance system for attack and reconnaissance drones.
DS	Air-to-air radar guidance system.
DS	Surface-to-surface radio inertial guidance system.
DS	Drone command guidance system.
PP	Data transmission and processing for surface-to-air missile guidance.
PP	Surface-to-air radar guidance system.

SENSORS

SE	Precision location of radars.
SE	High precision and high resolution forward-looking radar.
DS	VHF homing beacon for supply-drop aircraft.
DS	Anti-jam radar transmitter and receiver.
DS	Radar anti-clutter receiver.
PP	Beacons, C-band and X-band.
PP	Strategic bombing radars.

COMMUNICATIONS AND DATA TRANSFER

SE	Obstacle-gain data transmission.
SE	18-Channel teletype.
SE	Noise-modulated data links.
DS	Integrated battlefield air mobile radio communication system.
PP	High-density FM voice multiplex.
PP	Integrated battlefield ground mobile radio communications system.
PP	High density UHF communication system for air defense.
PP	Coded secure communications.
PP	Pulse code modulated communication equipment.
PP	Multitone and digital selective calling equipment.
PP	Transportable and fixed-station microwave wide-band relay equipment.
PP	AM, FM and SSB voice and data communications equipment.
PP	I.F.F. equipment.
PP	Data link and logic for ground-to-air command guidance of aircraft and missiles.
PP	Miniaturized Transceivers.



Here is an unclassified look at representative Motorola military electronics programs...past and current. Necessarily incomplete, the listing includes only enough projects to demonstrate the breadth of experience at Motorola's Military Electronics Division. For detailed information on how Motorola's capabilities can be applied to your problem...or for data on engineering career opportunities...please write: Motorola, Inc., Military Electronics Division, 8201 East McDowell Road, Phoenix, Arizona.

KEY:

Program Status Coding (Reference MIL-E-5400B)

SE	*Study programs or programs resulting in experimental models.*
DS	*Programs resulting in developmental and/or service test models.*
PP	*Programs resulting in pre-production prototypes and/or production models.*

A-811-1

experience/on file at Motorola

COMPONENTS

PP Quartz crystal resonators and filters.
PP Electrical wave filters.
PP Electromechanical filters.
PP Precision V.F.O.'s and B.F.O.'s
PP Electromechanical reed filters and tone generators.
PP Transistorized power converters.
PP Transistorized voltage and current regulators.

ELECTRONIC WARFARE

DS Battlefield electronic warfare.
DS False target generation system.
DS Tracking jammer.
PP Subminiature passive radar illumination detector.

SOLID STATE MATERIALS AND DEVICES

SE Ferro-electrics.
SE Ceramics.
SE Solid state devices.
PP Ferrites.

NAVIGATION

SE Doppler personnel navigator.
SE Inertial sensors.
SE Supersonic intercontinental bombing-navigation system.
SE Hyperbolic battlefield navigation system for aircraft, land vehicles and man pack.
DS Hyperbolic amphibious navigation system.
PP Aircraft rendezvous and station-keeping systems.

GROUND SUPPORT AND TEST EQUIPMENT

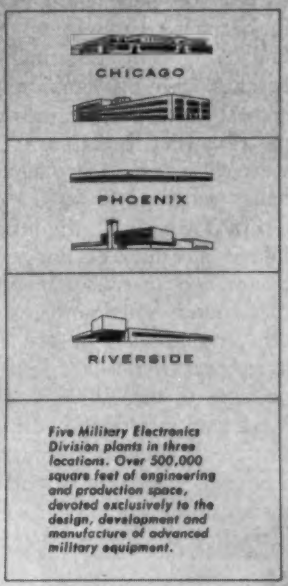
PP Phase-lock telemetry.
PP Command destruct receivers.
PP Guided missile test equipment.
PP Programmed automatic test system.
PP Aircraft test equipment.
PP Militarized precision pulse circuit testers.

COMBAT SURVEILLANCE

SE Drone guidance, data sensor, and data transmission integrated reconnaissance system.
SE Aircraft data sensor, and data transmission reconnaissance system.
PP High resolution side-looking radars for aircraft and drones.

DATA PROCESSING AND DISPLAY

SE Automatic data processing for electronic countermeasures.
SE Data processor for electromagnetic intercept.
SE Threat evaluator for air defense.
PP Shipborne electronic data system for air defense.
PP Large-scope bombing radar indicator.



Five Military Electronics Division plants in three locations. Over 500,000 square feet of engineering and production space, devoted exclusively to the design, development and manufacture of advanced military equipment.

MOTOROLA

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heading the list. At that, the word probably wouldn't have been overused. These embankments of dirt, stone and brush dominate the Normandy terrain and make combat there as specialized a business as fighting in the desert or in the mountains.

Had the invasion been launched into a hinterland of desert or mountains, certainly training would have been aimed toward those conditions. But so far as I can determine, none of the divisions entering Normandy realized that, after leaving the beach, their every move would be governed by the presence of these embankment-enclosed fields. In one eight-square-mile area 3,600 of these natural field works of squad and platoon size were counted. Probably no other area on earth affords the defender a more natural position in depth—extending for miles, ready-made for use after only the slightest adaptation.

Again, as with the use of smoke on the beach defenses, certainly a plan so minutely prepared as that for Normandy must have evaluated the hedgerow as an obstacle. However, this evaluation either was incorrect or was so unobtrusive that it was not reflected in the training of infantry and armor, which accounts for one of the mysteries of World War II. Normandy's hedgerows antedate written history. Along with the Fighting French, British forces had been fighting in there off and on for centuries. We know that in 1416 a heavily outnumbered English force occupied such a strong position in a hedge-enclosed field that the French chose not to attack. Even as late as 1940, the Allies retreated to the coast through the *bocage*. They must have noted and made use of its potential for defense and delay.

The Allied planners had four years of war experience behind them. In England a special center was established which developed the tactical doctrine of preliminary bombardment followed by the tank-supported infantry assault with flamethrower and demolition. My battalion trained there for nearly a year. Day after day we practiced debouching from landing craft and attacking bunkers representing the fortified zones covering Omaha. During the final phases we assaulted the beaches with live ammunition and used demolitions on real bunkers. Rehearsals were so exhaustive that the movements of flamethrower, demolition and automatic-weapons teams became almost as precise as those of a ballet group.

But during it all, the infantry got no hint that once inland it would be on ground that required special tactics and that its armor support would be largely road-bound. Since no pains were spared to prepare for every eventuality, we can assume that this particular aspect was overlooked, despite history and the wide experience of the Allied staffs, and the ample data on Normandy's terrain. It cannot have been avoided because of intelligence security as to the landing sites. The hedgerow country extends from the north of Normandy to at least as far south as Brest. Training for hedgerow conditions would not have pinpointed the invasion area any more than did training with landing craft.

The infantry and armor learned

I know of no pillbox on Omaha Beach that was destroyed by flamethrower and demolition, though bangalores were most useful against wire. Perhaps the assault would have succeeded had the preliminary bombardment not miscarried. But in the circumstances, the complete futility of infantry debouching from assault craft to attack fortifications like those at Vierville and Les Moulins was quickly and bloodily demonstrated.

The infantry grasped the point of this demonstration instantly, and penetrated over the bluffs between those fortified beach exits concealed by smoke. Once past the bluffs, however, they encountered the surprise of the hedgerows. Not all were defended, but those that were caused the attack to slow down until each was investigated.

Similarly, no sooner had tanks cleared the beach than they found themselves road-bound. If not all the endless stretches of embanked fields were defended, certainly all roads were. Not until after several weeks was the expedient developed of welding prongs to the bows of tanks to enable them to plow over the tops of the lighter hedges and thus gain a limited mobility off the roads. In the end, infantry and armor arrived through trial and error at workable attack tactics, but it took time and lives.

All this was long ago, and the predictions that there will be no more assaults of the Omaha Beach type may be valid—though there was Korea, wasn't there?

In any event, while there may be no specific application of lessons of the Normandy battle to war of the future, in developing tactics for the nuclear battlefield we had better be aware of the modern equivalent of failure to appreciate the value of blinding the enemy on a future Omaha Beach and neglecting to appreciate the defensive potential of the *bocage*.

If we make such errors in developing tactical doctrine for nuclear warfare, then military history in general and the Normandy battle in particular indicate that errors in the field will be in the obvious rather than in the remote and fine details. (The possibility that the bombardment could seriously miscarry, that infantry cannot cross open beaches to close within flamethrower and demolition range of intact fortified zones, that the *bocage* terrain is difficult—all these are direct and obvious matters. They are not points of fine detail. Yet the best pre-invasion training plans did not provide for them.)

Battle, no matter how indirectly approached from a strategic standpoint, is a direct business of great violence when joined. Thus it has a way of dealing more punishment for violations of the direct and obvious than for overlooking obscure details. The history of 6 June 1944 and of subsequent operations in Normandy affirms this fact and makes valuable reading for this purpose alone.

The 1958 Annual Meeting . . . Establishes AUSA Objectives for 1959

1. An Active Army of one million officers and men.
2. An Army National Guard of 400,000 officers and men.
3. An Army Reserve of 300,000 officers and men.
4. An increase in the rate of modernization of the Army so as to insure qualitative superiority in weapons and equipment.
5. Top priority in equipping the U. S. Army with sufficient transport aircraft to lift one-half of the Strategic Army Corps.
6. Full use of the Army's proved capabilities in land-based surface-to-air defense systems.
7. Removal of weight and range limitations on Army aircraft.
8. Action to maintain and increase Career Incentives.
9. Encourage outstanding youth to enter the United States Military Academy.

MESSAGE FROM THE PRESIDENT OF THE UNITED STATES

To all attending the Annual Meeting of the Association of the United States Army, I send greetings.

In the shaping of our Nation's history the Army has played an essential role. With discipline and diversion the American soldier, supported by a strong citizenry, makes a basic contribution to the security of our country and to the peace of the world.

Best wishes for a fine meeting.

Dwight D. Eisenhower

MESSAGE FROM THE CHIEF OF STAFF, U. S. ARMY

FELLOW MEMBERS OF THE ASSOCIATION OF THE UNITED STATES ARMY:

I have asked General Lemnitzer to express my sincere regret that an unavoidable absence from the United States has prevented my personal participation in this fourth annual meeting of our Association. I had looked forward to this event with pleasure as a welcome opportunity to see and talk again with you.

It is encouraging to note that in addition to reviewing and reporting on the significant accomplishments during the past year, the purpose of this meeting is to look to the future. In this complex era of unprecedented technological progress and of intricate political problems, the future belongs to those who refuse to be awed by its difficulties and resolutely accept its challenges.

Your program for these meetings is broad in scope and covers the Army's activities in considerable detail. As you proceed, I hope that each member of the Association will keep clearly in mind the over-all objective of the Army today and for the future. It is to contribute to the security of the Nation as a member of our tri-Service team by providing ready forces for sustained land combat in any type of conflict, any place, any time.

These forces include not only the mobile divisions and supporting forces deployed overseas or held in reserve here at home. They also include surface-to-air Army missile units which guard our strategic and industrial centers against air attack. In combination, these forces constitute an indispensable weapon for the defense of our country. We should all look to their continuing strength and well being.

In the meantime, my best wishes for a most interesting and productive convention.

Maxwell D. Taylor

MAXWELL D. TAYLOR
General, United States Army
Chief of Staff

Future Requirements

GEN. L. L. LEMNITZER
Vice Chief of Staff, USA

ALTHOUGH THE FUTURE can never be clear, I believe that we can look with a fair degree of accuracy through Fiscal Year 1962. We know where we are now. I propose to consider where, to some extent, we are going. I shall also give some consideration to where we need to go.

In any military assessment, the governing factor which establishes the pattern from which everything else follows is the objective. The Army's basic objective is to furnish the capability within our total national defense effort for sustained combat on land in any type of war, and to shoulder an important share of the responsibility for the air defense of the continental United States and of our forces overseas. I think it is possible to say with assurance that there is no weapons system and in fact no supportable concept, in existence or contemplated, which gives us any grounds to believe that this objective will alter during the period in question—or, indeed, for any time that we can realistically visualize thereafter.

After defining our objective, we must consider the military threat which we may be called upon to meet. Basically, I am assuming, and I feel that the record proves, that the intensity of the Communist threat will remain substantially unchanged—certainly unreduced. Both sides have the capability of inflicting tremendous destruction on each other.

As a consequence, the United States has devoted an important part of its effort to preparing itself to deal with the danger of general atomic war, which has been referred to as "the worst possible case" confronting us. We have made this effort not only to give ourselves the best chance of meeting such a danger if it should materialize but also to give ourselves the best chance, through our obvious ability to meet it, to prevent it from ever materializing. In my opinion, this effort has been fully justified. Nothing I say should be taken to suggest in the slightest measure that the ability to deter general war, and, if necessary, to fight and win such a war is not a vital requirement.

The value of the effort which we have made is suggested, even if it cannot be proved, by the fact that since the advent of the atomic bomb there has been no general war. That is not to say, however, that there has been no war. On the contrary, military aggression on a limited scale has been resorted to as merely another Communist device for expansionism even when we had a monopoly of nuclear weapons. The growth of the Soviets' nuclear capability, their progress in the missile field, and their successes in their satellite program make it seem reasonable for us to assume that there will be no moderation in the aggressiveness of their attitude, and that in all probability they may become increasingly intransigent. This assumption is certainly supported by the events of the past few months in the Near and Far East. We may well find it necessary to be able to respond to increasing levels of provocation in an atmosphere of heightened tensions.

With respect to the major operational missions which will fall to the Army, therefore, I believe that we can assume that they also will remain unchanged.

Broadly speaking, there are three of these missions, having direct application to both general war and limited war.

First, we are maintaining, and must continue to maintain, forces deployed in strategically significant overseas areas, to deter aggression or to react promptly to any aggression occurring if deterrence fails.

The second mission follows from the first: we must continue to maintain in the United States a mobile, combat-ready strategic force for rapid reinforcement of our deployed forces, or for deployment to other areas where danger may develop.

The third mission is to continue to contribute the Army forces required for the air defense of the continental United States and our troops overseas.

In sum, we may reasonably conclude that by 1962 there will be no appreciable change in the Army's objective, and certainly no abatement in the nature and scope of the threat which the Army must be prepared to meet or in the major operational missions undertaken by the Army in order to be ready to accomplish its objective in the face of the existing threat.

* * *

Now, a person speaking in October does not need to be much of a prophet to make forecasts concerning the means which will probably be available at the end of the current fiscal year. In looking beyond that point, however, I must speak not of what we shall have but of what we shall need.

For the moment, rather than talk to you specifically in terms of personnel strengths and money, I think it would be more useful on this occasion to speak in general terms. Keeping in mind the existing military threat, the Army's current capabilities, and the requirements which can be clearly anticipated, within an acceptable margin of risk the Army must achieve and maintain a balanced readiness.

Let me first discuss the question of modernization. In terms of dollars, approximately 60 per cent of the Army's inventory today was procured during World War II or the Korean War. Ten per cent of it is of pre-World War II vintage. As a result, many items have reached a point where they are no longer economical to maintain or are no longer adequate in the light of current requirements. This situation is further complicated by two factors. One is the increased costs for replacement of items of equipment which are already standard. The other is the expense of new items.

It has been suggested that the cost of new weapons and equipment can be at least to some degree offset by reductions in military manpower, on the premise that the increased capabilities of weapons result in a diminished need for men. On the contrary, all historical experience shows that new weapons result in greater manpower requirements. A sober consideration of all the pertinent facts which apply

today reveals that this pattern is being repeated—that increases in the need for men accompany increases in the capabilities of weapons and equipment.

In order to obtain optimum results from the Army's defense dollars, we must properly balance our personnel and modernization requirements as well as our needs for conventional and non-conventional weapons and equipment. As you are well aware, military effectiveness is measured by the combination of the essential military ingredients—firepower, mobility, communications, and personnel. It is fair to say that improved weapons will reduce the need for personnel only if, in spite of this reduction, these weapons will be capable of producing an aggregate of military effectiveness equal to the requirements of the threat.

In general, the modern weapons and equipment whose characteristics are most readily thought of by the layman as basically altering the conduct of war are typified by surface-to-surface and surface-to-air missiles with atomic warheads, high performance aircraft, and missile-launching submarines. These weapons systems contribute significantly to the delivery of long-range firepower of great magnitude in the general atomic war—the "worst possible case"—which it is our purpose to avoid. While they can contribute to meeting aggression short of a general war, they do not however, improve our ability to maneuver, to exploit firepower, and to occupy and deny ground, particularly in those situations short of general war which appear as a constantly recurring threat. The ability to perform these functions is fundamental to achieve military victory.

Thus, these categories of new weapons will justify reductions in Army manpower only in those types of forces where the primary function is to achieve destruction by heavy firepower. Army forces, therefore, benefit from them only to a limited degree, through the replacement of heavy non-atomic artillery and reduced close air support requirements. Army forces gain nothing from these particular items in terms of mobility or of ability to occupy and deny ground.

I do not mean to minimize the great value of these weapons, but merely to emphasize that they have not significantly altered the requirements which must be met by Army forces. The new weapons and equipment have brought great increases in our capability, but their net effect has by no means been to reduce our requirements for manpower in either numbers or quality.

I should like to point out that insofar as our capability for meeting the problem of situations short of general war is concerned, we are not without considerable assets. However, in reviewing the history of the 18 limited wars which have occurred in a wide variety of places and circumstances since 1945, it becomes evident that despite many points of difference in these wars, they have possessed a common distinguishing characteristic. This was combat operations on land—in most cases, sustained combat—for the purpose of securing control of land areas and the people in them. Thus, it is in this field of limited war capability that I believe we must continue to improve in order that we may confront the entire spectrum of threats posed to us by the Communist bloc with the optimum degree of appropriate force to meet the varying situations. It is this overriding requirement for improvements in our strategic flexibility that, in the main, supports the necessary increases in Army funds—funds permitting attainment of the essential levels of manpower, weapons, and equipment.

* * *

It is of vital importance to the Nation as a whole that the capability be maintained for both general and limited war to be deterred if possible and to be successfully dealt with if deterrence fails. This capability depends upon the combined capabilities of all of the Armed Forces. As President Eisenhower has said, "Separate ground, sea and air warfare is gone forever." It follows that to the extent that the capability of any one of the Armed Forces might be deficient, the total capability would be reduced.

It is with this consideration in mind that I have suggested several of the most significant requirements which need to be met if the Army is to fulfill its objective in the light of dangers which will continue to exist. I have stated what is needed to meet our requirements in personnel strength and modern weapons and equipment. I want to stress that these are not requirements for the Army as such, but for the Nation's security. That security depends upon the availability of balanced, tridimensional strength, of which a modern, mobile, highly skilled, dedicated Army is an essential element. Only through such versatile strength can we be ready to meet the broad variety of war situations which constitute the current threat and of which the situation short of general atomic war seems most likely to occur.

Determined Deterrence

THE HON. WILBER M. BRUCKER

Secretary of the Army

THROUGHOUT THIS MEETING there have been many expressions of support for increased mobility, flexibility and the development of tactical weapons for limited warfare. I, for one, welcome every such expression of support, and the helpful spirit in which it is intended. The Army is proud of the progress it has made, and is highly receptive to every constructive suggestion.

The past year has been one of tremendous progress in building military strength. It has also been a year of momentous challenge. The ruthless enemies of the Free World have applied tireless pressure in probing not only our military defenses, but more significantly our technological resources and our moral armament, in search of any weakness they might profitably exploit.

The unfolding pattern of events throughout the world has emphasized in the most impressive way the imperative necessity for determined deterrence against aggression.

The Soviet Union has meddled dangerously in the Middle East with its inflammatory propaganda and military pressure in the hope of gaining a solid foothold.

When the United States responded to the pleas of the free government of Lebanon and sent troops to help sustain Lebanon's independence and integrity, the Soviet Union sought unsuccessfully to dissuade us from this fulfillment of a solemn obligation by violent denunciations and menacing gestures.

Again in the Taiwan Straits, the Sino-Soviet conspirators tested the resolution of the United States and the value of our pledges. It was not land which was at stake there, but the principle that communist armed aggression should not be tolerated anywhere in the world.

In other parts of Asia and in Africa, the communists have sought unremittingly to foment unrest and to exploit nationalistic ambitions.

The Soviets employed the full propaganda value of their earth satellites and other scientific accomplishments to create the false assumption in the minds of our allies, as well as the people of uncommitted nations, that we are doomed to defeat, and that we are no match for the Soviets in the field in which we have always held a preeminent position. They have hoped that by this "big lie" downgrading America they could more easily open new doors for Soviet penetration and domination of free nations.

During the year, Soviet leaders continued to use "ballistic blackmail"—the threat of nuclear violence—against nations allied with us in collective defense in a determined effort to precipitate a flight into frightened neutralism which would seriously impair the collective ability of the Free World to resist communist aggression. They have attempted in particular to "soften up" and destroy the North Atlantic Treaty Organization because they know that they cannot seize and exploit the rich prize of Western Europe—stepping stone to the conquest of America—as long as the members of the Atlantic Community maintain their interlocking military strength and their moral cohesion.

The Soviets used their puppet regime in Hungary to add a new chapter of infamy to the story of the Hungarian suppression when it brutally murdered Imry Nagy and other patriot leaders involved in their country's uprising against Soviet tyranny in October of 1956.

The Soviet Union continued stubbornly to defy all efforts to achieve the reunion of Germany, Korea, and Viet Nam on honorable terms.

In many parts of the world, the Soviet Union has carried on a determined economic offensive designed to ensnare free nations and draw them within the Soviet sphere.

In short, the Soviet Union is engaged in every kind of aggression, direct as well as indirect, in order to harass, divide, confuse, weaken, and destroy the Free World.

In the face of this enemy who attacks in every quarter, and strives by every means to achieve world domination, we certainly cannot afford to have any gaps in our armor.

The Sino-Soviet bloc has more than eight million men under arms at this very moment, including four million in the armies of Red China, North Korea, and North Viet Nam. Active communist forces include over 400 divisions, 500 submarines, and more than 25,000 modern aircraft.

The Soviet Union has 2½ million men in its ground forces alone, organized into 175 ground divisions, most of them armored. Because of its huge trained ready reserve, it could expand its ground forces to 8½ million men, and 300 divisions within 30 days. Within the first year of total mobilization, its ground forces could be raised to 14 million men, and 500 divisions could be ready to fight.

More than two-thirds of the Soviet military budget is spent on the Soviet army, the largest land army on earth. It has weapons and equipment of the most modern design. It is plentifully provided with powerful tanks, tactical missiles and a wide range of other advanced weapons, light aircraft, and helicopters. Furthermore, the Soviets are concentrating almost all of their best scientific and engineering talent on the frenzied development and production of still more ultra-modern weapons and other technological devices in an all-out effort to dominate the land, the sea, the air, and even outer space.

The only answer to aggression is to build an all-out and determined deterrence.

We might define military deterrence as the first phase of all-out deterrence. The second phase embraces the moral, psychological, and economic factors. It must be made crystal clear to all Americans that these factors are equally as vital to our national security as military forces and hardware.

It is evident that if military deterrence is to be effective we must be prepared for every eventuality. The communists must be so impressed by the quality, strength, and versatility of our Armed Forces—and the firmness of our determination to use them if need be—that they know beyond the shadow of a doubt that they could not profit from military aggression in any form.

We recognize that deterrence of war in all its possible forms requires the whole spectrum of military power provided by a combination of the unique capabilities of each of the Armed Services. Nothing less will suffice.

In the recent past, many people in and out of government, and even some within the military forces themselves, questioned the necessity for large-scale land forces in the atomic age. However, events have long since overtaken these doubts. What transpired in Hungary, Viet Nam, and more recently in the Middle East and the Taiwan Straits—all incidents primarily involving the application or threat of communist land power—were ominous reminders of the requirement for effective, balanced ground forces.

It would seem obvious that because of the growth of atomic stockpiles, general nuclear war, fought to its inevitable conclusion, could result in nothing short of disaster. In the present situation, with an abundance of mighty retaliatory weapons on both sides of the line, it is illogical to believe that the Soviet Russians—who certainly covet the palpable rewards of world mastery rather than the charred remnants of civilization—would irrationally abandon all hopes of profit, and invite the almost certain destruction of their own country, by intentionally launching a suicidal nuclear conflict. Therefore, we must regard limited aggression, with a succession of limited, attainable, profitable objectives, as by far the most likely form in which the Soviets will employ their military power to carry forward their ruthless program of conquest.

Local wars, fomented civil strife, military intimidation, and similar forms of limited operations—coupled with vigorous efforts along every line to divide, confuse, and weaken the Free World—are all down in the Soviet book as very practical methods by which they might achieve their ulti-

mate purpose without ever challenging our nuclear retaliatory power. The Soviets have been employing this limited war strategy for well over a decade, during which they and their allies engaged in eight local wars and military actions for communist aggrandizement.

It is imperative that America should be prepared both for a "big" war or a local war; for an atomic war, or one in which only so-called conventional weapons are used; for a war fought by Soviet troops, or a war fought by puppet "volunteers" in an effort to nibble away the fringes of the Free World.

It should be clearly evident that if we were less well prepared for limited war than we are for the remote contingency of all-out nuclear war, only two courses of action would be open to us in the event the communists launched limited aggression:

We would either have to let them succeed with conquest on the installment plan, or we would have to pursue the course of desperation by precipitating the suicidal nuclear holocaust we are striving by every means to prevent!

This requirement has been fully recognized by Secretary of State Dulles, who has pointed out the need for balanced forces-in-being which are capable of applying military power with complete flexibility in order to achieve decisive results without involving vast destruction and widespread harm to humanity.

It is noteworthy that the communists have so far attempted armed encroachment only where resistance was feeble or non-existent. Defensive strength, coupled with determination, has effectively dampened Soviet enthusiasm for military excursions. No Soviet aggression has yet been launched within range of American guns.

Advanced weapons systems, strategic missiles, and bombers—although absolutely essential to the effectiveness of our combined forces, and thus to the deterrence of aggression—will obviously not be able to win any war alone. No final decision can be obtained by remote control. The control of the land, which is the ultimate objective of every military operation, can finally be achieved only on the ground. Ever since the first crude weapons of war were contrived to extend the capabilities of men, all down through the years to the age of nuclear weapons and guided missiles, it has been the fighting man on the ground who has been the fundamental element of warfare—the only "ultimate weapon."

In this nuclear era, strong and effective Army forces, able to cope with any foe, any time, any place, and on any terms as part of a unified land, sea, and air command, are more essential than ever before to our national security and the preservation of the peace of the world.

We can all be proud of the vital role played by the United States Army in the military phase of all-out deterrence. During the course of this meeting there has been presented an inspiring mosaic picture of our great Army, "Ready for Action—Any Kind, Any Time, Any Place."

* * *

I should like to point out that the Army has taken the leadership in the field of low-yield atomic weapons—fractional kilo-tons we call them. We have been pushing this development for a long time. We need them; we must have them in order to be fully effective on the battlefield of the future.

I have always insisted that battlefield mobility shall be the prime criterion for all Army weaponry. The Honest John is a highly mobile missile. It can move anywhere that a 2½-ton truck can go—across country or on dirt roads. It can occupy a position, fire, and move out again in a relatively few minutes, which compares favorably with the best performance of our conventional field artillery, which has always been considered by every military authority as highly mobile. In addition, Honest John is air-transportable, thus giving it the highly important strategic mobility which we seek for all Army forces. As a matter of fact, the Army's entire missile family, including the highly effective Redstone and Jupiter, is relatively mobile. Army missiles are the only operational surface-to-surface missiles in the hands of army troops in the Free World today.

An effective Army must have adequate strategic mobility. Adequate strategic mobility requires more and better airlift. We have been emphasizing this point for years, and we must continue to do so if we are to realize our full combat capabilities.

We often hear the suggestion that the increased capabilities of weapons will result in a substantial reduction in manpower. This is not supported by history, which reveals that every improvement in weaponry has been accompanied by an increase—not a decrease—in the requirements for manpower. Today's experience is no exception. Manpower requirements to employ and support new weapons will more than offset the meager manpower savings resulting from the elimination of the previous weapons.

The deterrent military strength to which the United States Army contributes so mightily, forms a splendid shield for the Nation in these critical times. We must realize, however, that military deterrence alone will not produce the substance of peace which we seek. True peace is the end product of determined, all-out deterrence.

Just as effective military deterrence requires the whole spectrum of military power, so does over-all deterrence require the whole spectrum of our national resources—moral, spiritual, and material.

In the final analysis, the psychological aspects of deterrence are no less effective than the military.

The masters of the communist world like to tell their people that America is a "Paper Tiger."

I would remind them in this connection that three times in this century aggressors have thought that America was a "Paper Tiger," and three times they have found out the hard way how disastrously wrong they were. In World War I, World War II, and Korea, they discovered that the American people had the fortitude and determination to stand up and defend themselves.

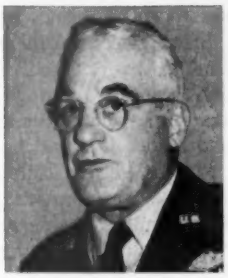
America has no reason to flinch in the face of any strident threat uttered by Khrushchev or any of his co-conspirators. Let any would-be aggressor take prudent heed! America is no "Paper Tiger!"

It is imperative that we as individuals understand that our attitudes, our determination, our confidence in our ability are just as essential to the national well-being as the mightiest weapons in democracy's arsenal.

If we are to be successful in preventing war, any po-

MR. BRUCKER

GEN. LEMNITZER



GEN. TWINING

tential aggressor must be impressed not only by the quality of our armed strength, but also, and more importantly, by the quality of our spirit—our will to win, our unity of purpose, and our real dedication to the ideals we espouse.

We deployed no great military force either in Lebanon or in the Taiwan Straits. The greatest force working for the prevention of war and the deterrence of aggression was the force of our devotion to principle.

Had we wavered or retreated before communist threats in the Quemoy situation, the propaganda value to the communist cause—particularly in the whole Pacific area—would have been immeasurable.

By our resolute stand we told the masters of the communist conspiracy:

You shall not continue to consume the Free World bit by bit through the threat of military attack.

You shall not force free men to negotiate from fear.

You shall not advance yourselves farther toward your avowed goal of world domination by the employment of "ballistic blackmail."

The psychological impact—spreading in ever-widening circles to the four corners of the earth, and inspiring countless millions of people—may well have a far greater effect in deterring communist expansionism than the greatest military force we could possibly mobilize.

One of the most essential ingredients of all-out deterrence is national unity. We cannot afford to be a divided people. We cannot afford to allow any divergence of opinion to develop into bitter strife which saps our national strength. Freedom of speech is precious and is a part and parcel of our way of life. However, our debates ought to be constructive. We should use our precious freedom of speech to derive greater understanding of the problems we face, and to arrive at greater unity of purpose.

We need a new resurgence of bi-parisanship. Partisan conflicts which detract from our ability to pull together with all our power to achieve our goals have no place in our national life today.

There is one task for all, and we must tackle it with one mind and one heart.

We have so many things in common, and so few real differences! It would be tragic if we magnified our differences while we overlooked our common danger.

We must resolve not to sacrifice the great things to the small irritations, to the paltry considerations of personal preference, advantage, or convenience.

As you know, only recently I returned from an extensive inspection of United States Army installations in the Far East. . . Naturally, I visited Taiwan. While on the island I was reminded that in 1955 I visited several of the offshore islands with Secretary Milton and others. On this last visit we saw the fortifications—the earthworks, the trenches, and the beaches with their defenses. While there are some things I can't say because of their classified nature, I will say this: the island of Quemoy is as well defended as any bastion I have ever seen.

Let no one be mistaken: no American soldier is needed on Quemoy, for 90,000 Nationalist troops are there—ready for whatever might happen. They are well trained.

While in the Philippines, I called upon President Garcia. It was a coincidence that while I was talking with him, President Eisenhower was giving his address of 11 September in which he made it quite clear that we would not follow the course of appeasement. Upon leaving the Presidential mansion, I noted that the newspapers being sold on the street carried big black headlines, eight columns wide, saying in essence, "Ike says 'no Oriental Munich'." A subheadline said in effect, "Ike says, 'Philippine Islands may be next'."

When I recalled that only 250 miles of open water lies between Taiwan and the Philippines, I was struck by the thought that, if we give in on Taiwan, what comes next? Are we to be forced back to the Philippines, to Hawaii—perhaps all the way back to the continental United States.

Think this over, my friends, and have your friends think it over.

I am concerned with the well-being of our country and of the Free World. I am deeply interested in our Army, its mobility, readiness, posture, and the number of men we need to perform our job adequately. I am concerned with the need for more airlift. These are matters of concern not just to the Army, but to our Nation.

Near the end of his life someone approached Disraeli and said, "Disraeli, what was the secret of your success?"

"Constancy to purpose," was his simple answer.

This applies to our Army. All of us must rise to our best and retain constancy to purpose. Constancy to purpose is the secret of success for our Army and for our country.

We ask nothing for the Army that we don't want for our country. We want only the best for our country to insure the success of its leadership in the Free World.

Priorities and Improvements

GEN. NATHAN F. TWINING

Chairman, Joint Chiefs of Staff

IT IS UNNECESSARY for me to discuss in detail the extent of the Soviet Bloc threat. I think you all are familiar with the numbers of Communist divisions, submarines, and airplanes. You are also aware of the scientific strides made by the Soviets, although the extent of these strides has been somewhat confused by various statements during the past few months. Suffice it to say that the Soviet Union has the military and industrial power with which to support International Communism to its goal of world domination unless we and the rest of the Free World maintain such strength as to deter the Soviet Bloc from aggressive action.

The most dangerous form of Soviet aggression would be a surprise atomic air attack against us. Therefore, we must maintain the force capable of deterring such an attack. If we are successful in this respect, it follows that the Soviets may strike in other ways. Hence, we must also be able to deter forms of aggression other than a surprise air attack.

Suppose our deterrent fails, what then? Well, this means we must have the ability to win whatever type war is forced on us. To sum up then, our military structure must be so developed as to be able to deter general war; deter limited war; win a general war if one is forced on us; win a limited war if we become involved.

The exact composition of a military structure capable of accomplishing the objectives I have just mentioned is the source of considerable debate. What type of war is most likely? How limited is a limited war? What should be the priorities of forces? How much is enough? And so on.

I think most of us will agree that the best way to deter a surprise air attack against us is through the maintaining of a retaliatory atomic force capable of destroying the Soviet Union. If we do this, the Soviets should realize the foolhardiness of initiating such an attack.

However, possession of this atomic retaliatory force cannot be considered as sufficient to deter *any* form of Communist aggression. Our force structure must be capable of coping with general or limited war at the proper time with the proper weapons. Our strategy must be sufficiently flexible to permit us to select the most feasible and advantageous course of action. Our means for conducting this strategy must be tangible and clearly evident to the Soviets.

With the exception of our continental air defenses, we cannot have a force for use only in general war. Similarly, we cannot have a force for use only in limited war. Nor can we afford to have an Army, Navy, or Air Force, each of which is, of itself, capable of carrying out every type of mission which may arise. We must have a balanced national military structure within which are found the means for performing the tasks to accomplish the four objectives I previously mentioned. Each service contributes to these means with the capability for which it is most suited.

To provide the deterrent to all-out atomic war, the Air Force is uniquely suited for quick reaction and rapid delivery of tremendous destructive power on an enemy. Hence the organization of the Strategic Air Command. The Navy, too, with its carriers today, and later also with its Polaris submarines, can contribute importantly to our over-all retaliatory power. The Army, with its forward deployed atomic forces, to include the Redstone missile today, and later the Pershing, contributes also. So, while the Air Force provides the greatest portion, this deterrent *is* composed of forces from the three services. Furthermore, these weapons systems would not exist very long if it were not for the logistic and security forces of all the services.

It is probable that if a Soviet atomic air attack were made on the United States, it would be accompanied by ground attacks at least in Western Europe against our allies, and by naval attacks against our sea lines of communications. Or, the Soviets might choose to encourage their satellites to launch conventional ground, naval, and air attacks against various of our allies which could lead to general war.

Since general war will involve a nuclear exchange, it is clear that we must either defeat the enemy or achieve an advantage which will enable us to continue operations leading to victory in the subsequent phase. This second phase would probably require the use of considerable ground, sea and air forces to attain final stabilization of the world situation.

In each of the above cases, all the services would very definitely be involved. I think it is obvious that no one service has a monopoly on fighting general war.

Now let's turn to forms of action less than general war.

In discussions of so-called limited wars, it is often difficult to pin down just what we mean by limited. Forms of aggression less than general may vary from an internal, bloodless *coup d'état* through an internal civil war, a clash between two small countries, and then up the scale. The point may be reached where a limited war may suddenly develop into a general war.

It seems obvious to me, then, that we cannot have a particular force which can take care of each of these contingencies. But, within our over-all military structure we must have the means of dealing with the entire spectrum of possible forms of conflict. We must be able to apply these means with degrees of power. Our national policy calls for the use of nuclear weapons in any case where such use would be advantageous to us. This of course does not mean we *will* use them in every case. It *does* mean that we should be prepared to use them.

Our national policy also envisages that we will fight an enemy, if we are forced into a war, on our terms and not on his. This means that we will not attempt to meet his masses of soldiers with masses of our own. We will meet him with superior weapons, equipment, techniques, and tactics. Above all we must have greater flexibility built into

our forces than an enemy has in his.

How do we get this flexibility? We get it by being able to apply the necessary degree of force at the point of tension quickly and decisively. Our overseas bases are important for this. Our naval fleets at sea with embarked marines are important. Our tactical combat aircraft and transport aircraft are important. Our Army divisions and other units both overseas and in this country are very important. And I would not want to forget our atomic retaliatory forces which certainly can contribute, if necessary, in situations less than all-out war. We must be able to meet a local war situation with forces varying from a single warship or marine battalion to several Army divisions and air force wings.

As in the case of general war, no one service has a monopoly on fighting limited war.

I am sure most of you agree with what I have said so far. But I am equally sure that you would like to make some of the same points which I hear so often in my present job. These include statements such as: we should have more airlift; we should have more divisions; we need more air defense; we need more strategic offense; we need new ships; we need better tactical air support.

These various requirements are generally supported by arguments that this or that type of war is most likely.

I doubt if there is any man in this room who has ever had all the means he would like to have had to accomplish some objective. To guarantee the defense of our country against *all* possible contingencies, many military people would like more of many things. However, as I said earlier, our national strength is not purely military. It is a combination of military, economic, political, and moral strengths. None can be subordinated to the other. Therefore, our military structure must be built to balance with these other factors. Within the over-all military structure we must provide those capabilities we consider most important.

I would like to see more and better airlift as has been advocated by the Army and others. Also we could certainly use newer ships, more fighter-bombers, and more or better other things. But when I sit down with the Joint Chiefs of Staff and look at all the requirements which are more important today, we have no alternative but to accord airlift and these other items lower degrees of priority. And so it goes with other items. I personally do not believe you can say that any particular form of war is more likely than any other. To predict a possible enemy's intentions is a risky game. I believe we have to build our over-all force with the objective of being able to meet any contingency with priorities based on enemy capabilities and not on enemy intentions. I also believe our reserve forces must be constantly improved. They are certainly vital to strengthening this broad capability.

It is clear that the United States Army has a most important role to play in contributing to our ability to meet the requirements of every type of war from the all-out to the very small local action. I believe this Association of the United States Army can do a great deal to assist the Army in preparing itself to perform the various missions called for to fill this role.

I would like to give you a few observations as to the direction toward which I believe the Army should point.

First of all, we must face up to the fact that the personnel strength of the Army, and of our Armed Forces as a whole, is not likely to increase. Consequently, your plans with regard to organization and deployments must be made accordingly.

In my opinion, the Army should be a compact, mobile, hard-hitting outfit with a minimum of supporting impedimenta. The majority of combat equipment should be capable of movement by air or fast ship. In the past we have paid a lot of attention to protective measures such as heavy armor on tanks and other vehicles. The resulting weight has created mobility and engine efficiency problems. I believe the emphasis should be on firepower and speed. Let the protection come through those characteristics. I realize that the Army has been doing a lot in these areas. All of us know that more needs to be done.

When I speak of mobility, I am thinking of both rapid movement and fast reaction. The Redstones, Corporals and even Honest Johns of today are not really mobile in the sense of rapid movement in a battle area. Nor do they yet possess the capability for fast reaction. Firepower is not much good unless it can be applied quickly and flexibly. Emphasis must be placed on insuring improvements in these characteristics in the follow-up models such as Pershing and Sergeant.

I think you should look closely at some of the non-combat activities of the Army. Are the research and development programs, which are certainly limited, dollar-wise, directed properly to providing this compact, hard-hitting Army I've mentioned? You must get the most out of your available personnel and funds by concentrating on essentials. These comments apply equally to the other services.

This mobility and flexibility I speak of depends in large measure on rapid and reliable communications, accurate target acquisition, and simple supply procedures. Every aspect of technology should be used to improve them.

The Army is doing a great deal in the direction of developing better weapons. I urge continued effort especially in the low-yield nuclear and the optimum fragmentation areas.

There is no question that the military machine is becoming more complicated every day. The very demands for speed, power, and reliability I have mentioned have caused this. However, I sometimes get the feeling that much of our equipment today is unnecessarily complicated. Are we making equipment so technical because it is supposed to be so today? I think we have introduced too many refinements and comforts into much of our equipment with resulting problems of maintenance under field conditions and of training, not to mention the factor of cost. I would urge that we not lose sight of the great advantage of simplicity particularly under conditions of stress.

The United States Army has played a vital role in the life of our country so far. It will continue to do so. Together with the other services, the Army must help build a force capable of meeting whatever type of aggression the Soviet Bloc may choose to throw at us. To do this, we must eliminate duplications, waste, and misdirected effort, and develop thorough interservice teamwork. I feel we're showing improvements in these areas today but we can always do better. Let's do so.

BY JUPITER! WE'LL DO IT!

Master Sergeant Forrest K. Kleinman

THE word that I brought away with me from this year's meeting of our Association is *faith*.

And if I thought that sounded corny—if I thought that faith were no longer a meaningful word in our language—I wouldn't be writing my impressions of the meeting. I'd be praying.

I began to get the word the moment I arrived on the spacious grounds of the Sheraton Park Hotel. Standing by a skyprobing Jupiter C missile and a giant radar sphere in front of the entrance was a new model armored personnel carrier.

The symbolic significance of the display drew some long-haired words from some observers. But to me it symbolized two simple ideas:

- No matter how high our minds might soar at the meeting, we would keep our feet on the ground.
- No matter how high our missiles might soar, we would continue to focus our efforts on the combat soldier.

My faith in the validity of this interpretation was reinforced in many ways during the next three days.

The combat soldier was the never-forgotten man of the meeting. His readiness for action—any kind, any place, any time—was not only the theme, but the scheme of the program. Speaker after speaker braved the spotlight to explain Army requirements in doctrine, tools, training, logistics, and *logic* for maintaining his readiness in the future.

While listening to the distinguished political scientists who addressed us, I lost sight of the ground at times. But plenty of field soldiers like General Bruce C. Clarke and Major General W. C. Westmoreland were on hand to bring me down to earth.

Not that anybody talked down to us. On the contrary, as Sergeant First Class R. W. McCarthy of the Connecticut National Guard Advisory Group gratefully remarked, they talked *up* to us.

This attitude toward the membership from the podium was exemplified by Major General A. J. Drexel Biddle. I was proud of our president's poise, tact and courtesy—particularly during those moments of verbal cross-fire which no large meeting is ever entirely without.

Noting General Biddle's unfailing habit of addressing every member who spoke from the floor as "sir," a young private declared: "From now on I'll never feel above calling anybody 'sir'!"

EVEN the members who told me that much of the discussion on the philosophy of limited war was over their heads convinced me that it wasn't over their hearts. For example, consider this remark from a conversation with First Sergeant George Stephens of Fort Leonard Wood:

"Suppose it were possible to stop an attack upon one of our allies just by dropping one H-bomb on the enemy's capital city. Suppose the only other way to help our ally were to send American troops. Which would you use: the bomb or the troops?"

"The troops," Sergeant Stephens replied without hesitation.

"Knowing that your decision would cost the lives of American soldiers?"

"I—I've got to say I'd use troops," he said.

"Why?"

"I'm a God-fearing man, Sergeant," he said. "I'd have to draw the line at killing women and children if I could!"

My faith in the American soldier's ability to appreciate the vital issues posed from the podium was also reinforced by Stephens' comments on manpower:

"It's good to know that industry can produce all the wonderful machines for the Army that I saw down in the exhibit hall," he said. "But I didn't see a machine that could automate a basic-training company like mine. There'll never be one! It takes people to train people. And it takes people to do the everyday service jobs necessary to feed, administer and housekeep a company!"

Master Sergeant Kleinman, who has ably represented the point of view of field soldiers in this magazine for the past several years, was invited to be AUSA's guest at its Fourth Annual Meeting and write a thank-you note for publication. The result, we are proud to say, speaks for itself. For latecomers, we might add that Sergeant Kleinman has some 16 years of active service, some of it commissioned.

Secretary Brucker covered the topic more broadly in his closing address. But I think he would agree that this topkick's realistic appraisal of manpower requirements at the training-company level speaks no less eloquently of an Army-wide problem.

FAITH in the American soldier was expressed many times from podium and floor. A particularly significant example occurred during the panel discussion moderated by Lieutenant General Arthur G. Trudeau. It was triggered by some highbrow questions on psychological motivation and "human engineering."

The gist of the panel's vehement reply:

"*There is no question that the American soldier* will *do his duty in any kind of future war!* . . . The only question is how well we can teach him to do it. Our Human Resources Research Office is employing social science techniques to help us find the best answer."

That considerable progress has already been made was revealed by the HumRRO exhibits. They showed that training times for some technical and military skills have been reduced by as much as 40 per cent.

During the same discussion period Major General John B. Medaris was asked how the Army and industry could cut lead-time in research and development.

His answer: *Faith!*

By having faith that a development requirement will be met and by allotting funds and responsibility accordingly, he explained, we can cut the time-consuming red tape imposed by present laws and step-by-step procedures.

It reminded me of the old military principle of delegating the mission, means and responsibility for results. The principle is never out of date, but its application hinges on faith.

Judging by the audible reaction, some members of the audience were reminded of other areas of military activity where application of the principle may be lagging. Not all of them wore green tabs on their shoulders. Just as many wore business suits.

WHILE eavesdropping a press conference held by Generals Trudeau and Medaris, my faith in another old principle was confirmed. This one deals with public relations—a field in which the AUSA was ably represented at the meeting.

The principle: "Straight-from-the-shoulder facts beat trick shooting any day in dealing with the press!"

In plain, unvarnished soldier talk, the two generals made it clear to all with ears to hear that the Army's paramount concern on any issue is only what is best for our country. There is no other "Army story!"

Unfortunately, at times, the prime requisite for a front-page news story is conflict. But my faith in the AUSA was reinforced throughout the entire meeting by the way our spokesmen kept our paramount interest in mind. Like the Army the AUSA speaks for, our doctrine is tri-service. So ballasted and oriented, the meeting stayed on course.

Thumbing through the registration cards, I found still another reason for faith in the future of our Association. Every profession, every geographical area, every age group, every rank and file that is America was represented by the men and women in attendance. More than 50 per cent of them were civilians—confirming the statement by General W. G. Wyman at last year's meeting:

"National Defense knows no profession but all Americanism."

The most moving expression of faith that I heard touched depths probed by poets and soldiers long before the surface findings of sociology and psychology were put to use by men in grey flannel suits. It was the heart-stirring rendition by the United States Army Band and Chorus of "The Army Goes Rolling Along."

Both the new All-Army words and the Old Army music were in complete harmony with the closing thought voiced by Secretary Brucker:

"By Jupiter, we'll do it!"

THE last word on faith came from a man whose sole capacity at the meeting was line-of-duty. He was the Signal Corps sergeant who operated a spotlight—focused on the speaker's podium.

As the members filed out of the hall below and he switched off the spotlight, I stepped up with the question that I had asked so many people during the last three days: "What do you think of what you've seen and heard here?"

For the very first time, the answer was: "No comment."

"Come on, now," I urged. "You must have formed some opinion during all the hours you've focused that spotlight on the leading men of our country."

"No comment."

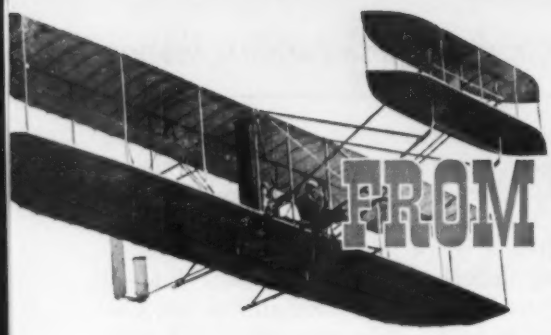
"Why not?" I goaded him. "Don't you think your opinion really matters to them?"

"Look, Sergeant," he blurted, "if we *don't* have faith in our leaders, God help our country! That's what matters to all of us."

Thank you, Sergeant Rutledge, for giving me the word.

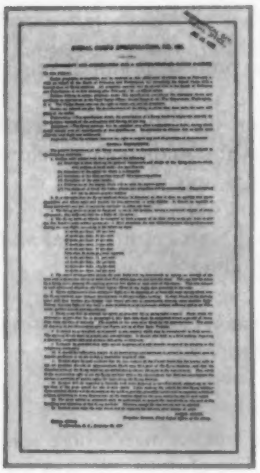
But lip service to the word will not keep the Army rolling along. We must mint what we mine and put our money where our mouth is!

With faith in our God, our cause, our leaders and each other, by Jupiter, we'll do it! That is what this year's meeting of our Association means to me as a master sergeant in the United States Army.



FROM THE WRIGHT FLYER TO TH

50 Years of U.S. Army Signal Co



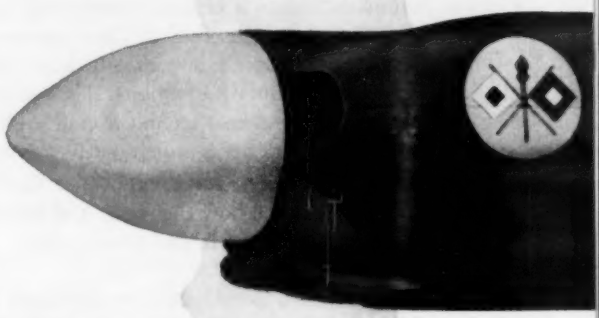
On December 23, 1907, Brigadier General James Allen signed Army Signal Corps Specification No. 486 and made history. It was the first specification by the U.S. Government for "a heavier-than-air flying machine with no gas bag." On February 8, 1908, the Army Signal Corps accepted Wilbur and Orville Wright's bid to provide a machine to meet this "fantastic specification," as it was heralded in the press of that day.

Provisions of the specification included: "2. It is desirable that the flying machine should be designed so that it may be quickly and easily assembled and taken apart and packed for transportation in army wagons...4. The flying machine should be designed to have speed of at least forty miles per hour in still air...8. The starting device must be simple and transportable. It should also land in a field without requiring a specially prepared spot and without damaging its structure... 10. It should be sufficiently simple in its construction and operation to permit an intelligent man to become proficient in its use within a reasonable length of time..."

It was intended that the Wright Flyer be used for military surveillance, but, although it had to meet tough Army standards of reliability, its performance was seriously limited. Carrying a pilot and observer, the old flyer could only be expected to labor dangerously over enemy positions in broad daylight.

TODAY COMBAT SURVEILLANCE DEMANDS DRAMATIC NEW PERFORMANCE WITH NO LESSENING OF RELIABILITY

Now, 50 years later, the Defense and Technical Products Division of Rheem Manufacturing Company has developed the SD-2 Drone to meet the very latest Army Signal Corps specification for a surveillance aircraft. The new Rheem SD-2 is an unmanned, high-performance drone that darts in and out over hostile positions, night or day in all kinds of weather, providing battlefield commanders with an up-to-the-minute picture of enemy activities. Flying ten times faster and a hundred times higher than the early Wright



Flyer, the pilotless SD-2 substitutes electronics and photogrammetry for pilot and observer... but still must face up to the same rugged Army requirements for *field reliability.*

Like the Wright Flyer, the Rheem SD-2 can "be quickly and easily assembled and taken apart and packed for transportation..." (In Army trucks, trains, or Flying Boxcars.) "The starting device" is "simple and transportable." In the field, a standard M-211 truck transports four fully assembled SD-2's, and a zero-length launcher on an M-105A1 trailer provides the completely portable launching device. And, for "landing in a field without requiring a specially prepared spot and without damaging its structure," the SD-2 is provided with a reliable parachute recovery system.

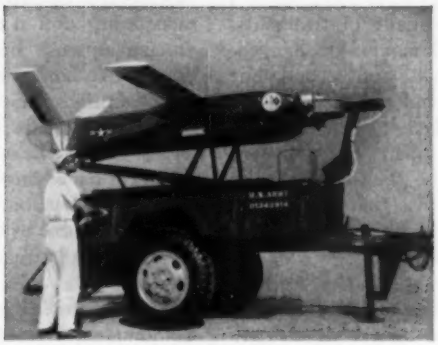
Proving its ability to meet the Army's age-old standard of "simplicity in construction and operation," the Rheem SD-2 is presently being put through its paces at the Army Electronics Proving Ground, Fort Huachuca, Arizona. After passing rigorous Army flight tests, the SD-2 will take its place in the field as another reliable combat system contributing to the superiority of U.S. ground forces everywhere.

If you would like to have a 7" x 12" reproduction of "Signal Corps Specification, No. 486" suitable for framing, write Dept. AW-407-1.

THE RHEEM SD-2 SURVEILLANCE DRONE

Corps Progress in Combat Surveillance

Standard M-211 truck transports four fully assembled SD-2's.



A zero-length launcher on standard M-105A1 trailer provides completely portable launching device.

A simple starter mounted on trailer starts drone engine prior to Jato take-off.

RHEEM MANUFACTURING COMPANY

Defense and Technical Products Division

11711 woodruff avenue, downey, california

Rheem

NATO's Role Today

ADM. ANTOINE SALA

Naval Deputy to Commander, SHAPE

IT IS NECESSARY to bear in mind the circumstances which led up to the signing of the North Atlantic Treaty for a full understanding of its very real and vital significance for the NATO countries. NATO is not simply an intellectual blueprint but a living reality, in which I, as a Frenchman, can testify that the Western countries of old Europe see as their only bulwark against the danger threatening them.

We NATO Europeans felt this threat as a personal danger. Look at a map of Europe. In the far north, Norway, and the Soviet Union have a common frontier. In the Baltic, the Danish island of Bornholm is a kind of Western outpost beyond the Iron Curtain, which in the centre is less than 200 miles from Strasbourg; Greece is surrounded by two satellite countries; between the Black Sea and the Caspian, Turkey and the USSR have a common frontier.

Since this bulwark was created, the free countries have never yielded to intimidation or threats.

When General Eisenhower was appointed the first SACEUR, and established SHAPE in early 1951, he . . . stated that its mission consisted essentially of two parts, and fundamentally those parts have remained unchanged.

First, our mission is to *prevent war;* and second, but only second, to defend the peoples and territories of the NATO countries, should we be attacked.

If the "prevention of war" is the *first* part of our mission, in point of time, as well as from the standpoint of the amount of effort devoted to it, it is also that part of the mission which has given such added emphasis and weight to the meaning of the word "deterrent."

Though many of us may have thought for a considerable period that our deterrent, in our efforts to prevent war, consisted of only one major element, I believe we all now recognize a minimum of *three* vital elements:

First, it is composed of what we call the Sword, our retaliatory forces, comprising in the main the heavy and nuclear-capable strategic forces, such as the Strategic Air Command of the United States and the Bomber Command of the United Kingdom but including as well the atomic delivery capabilities of SACLANT, and a very substantial atomic delivery force under SACEUR's control. Insofar as the heavy strategic forces are concerned, it is our feeling that they will continue for many years to contribute much to the preservation of peace, however their potential may be augmented by the developments in our weapons systems; they have been and for many years will be a primary buttress of our hopes.

The *second* element of our deterrent is the Shield of which SACEUR has so often spoken. It comprises land, sea and air forces, each with many nuclear capabilities which are actually our forward barrier against aggression; it is the Shield that actually occupy and hold the forward lines, stretching from northern Norway to eastern Turkey, in their readiness to defend the NATO area.

And then there is the third and most important essential to the matter of the deterrent, which is the will and determination of our peoples to use our strength promptly and effectively, if we are forced to do so.

* * *

Now, I want to go a little deeper into the matter of the deterrent, for to deter only general war might encourage an aggressor to provoke limited war as the quickest and least expensive means to an end. There must be no invitation to any "cheap" kind of war, whether by proxy as in the case of Korea, or by other means. Even "local aggression" by non-Soviet forces must be deterred (or else resisted and promptly defeated), vital functions in Allied Command Europe of the "Shield." Thus a deterrent for each type of warfare is essential, and each complements the other, in our efforts not only to preserve the peace but to provide the essential minimal measures of our security.

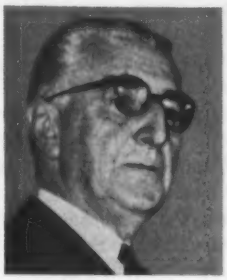
* * *

Aware of the increasing specialization in types of warfare now, it is not easy to evolve equipments, weapons, and skills that can serve equally well in meeting the very diverse types of threat which face, or will face, our western world. However, the very effectiveness of our deterrents to whatever kind of hot war, whether in Korea or in Vietnam, may tend to increase Communist efforts in the "cold" war; we French have recognized this in North Africa, and it embraces in other parts of the world not only surreptitious infiltration in many areas, but includes economic warfare, in a sense, and perhaps even competitive programs for aid to "underdeveloped" countries.

As tensions that start the smoldering or outbreak of brush-fires perhaps have, and certainly will, become greater, the tighter the stalemate to general war. This is another reason for readying ourselves for *all* types of aggression.

Nevertheless, our NATO military programs, while designed to enable us to remain capable of supporting NATO policies in all situations, must also be suitably flexible if they are to remain applicable to situations which cannot have been foreseen. The strength we must seek is that combination of forces (including military, but also political, economic, and moral forces as well) which will induce any potential enemy to recognize clearly that aggression, direct or indirect, will be far from profitable. An essential ingredient in bringing about the desired effect, will be the credibility with which the aggressor measures the reaction of the Alliance. I would ask you to bear in mind that a hydrogen bomb may not be the appropriate response to situations similar to the one we French now face, and have faced in Algeria.

Our leaders must have the strength, and the resources, to enable them to select the correct response to a given threat, at the proper time and in the right place. That is the significant meaning of NATO, an alliance to which each member nation contributes according to means and capabilities.



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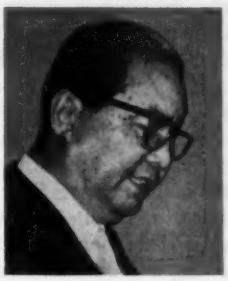

PRINCE WAN

The Shield thus remains our best and strongest control over what we term local aggression, whether that aggression consists of actual hostilities on a small scale, or the persistent nibbling of partisans or Communist agents. Even a stalemate must be made unrewarding to an aggressor.

The central meaning in a *military* sense of the North Atlantic Treaty, looked at through SACEUR's eyes, would thus be to deter another great aggression that might well wreck civilization as we know it; and, by means of the Shield to safeguard our civilization from the dangers of being whittled away by piecemeal actions, and border incidents, which could be halted otherwise only by invoking the full power of our retaliatory means, the Sword.

Bearing in mind here and always, that our goal is "security," rather than "safety" which is impossible in this day and age, the United States Army has made vital contributions to the strength, the effectiveness, and the determination of the forces of the Shield to accomplish each of its tasks with skill and efficiency. The battlefield advantage to its defensive forces is emphasized through all of its careful preparations to hurl back a local attack, and blunt a major aggression, by its careful planning, its thorough training and its complete readiness.

Since last year, we have been engaged in a crucial reexamination of our requirements for the defense of Western Europe, within the resources we feel can and must be provided by our member nations. This will require, as a prime element in our efforts toward a "forward strategy," a significant strengthening of the Shield; for it will be evident to us all that our efforts so far will have become unavailing unless *greater* contributions are made, not only with respect to the forces, but in respect of the spirit with which we approach the common task.

This underlines the importance of the provision within Europe of an atomic and missile capability that will reduce our dependence on strategic air power, and give greater reality to the sense of participation by each national component of the Shield. Their willingness to contribute their all against any simultaneous invasion, coupled with the possible disruption of sea communications between our own and the continent of North America, will depend importantly on the homogeneity of the resources available in Europe, under the control of the alliance as a whole. A stronger and self-reliant Europe, always a major concern of your country, can continue along its present path towards greater unity, can constitute a major force for peace with freedom, and can make its contribution greater in the future evolution of our Free World society.

The forces of the Shield, deployed along the "Iron Curtain," are not only a reminder of our determination to defend, but a symbol of the willingness of our nations to share the hazards in facing the threats to our existence.

* * *

The NATO Heads of Government Conference, which met in Paris last December, approved, on the recommendation of your country, the stockpiling in Europe of atomic weapons, to be placed in areas immediately available to the Allied forces, which can, if need be, deliver them effectively; and it also approved the placing of intermediate range ballistic missiles at the disposal of SACEUR. These two decisions help us immeasurably to assure against the success of a surprise attack, since, because of the characteristics of these weapons, our powers for retaliation are enhanced beyond measure. Our planning, though deliberate, is proceeding soundly, in order to maintain the effectiveness of our "deterrent" in the years to come, as well as to increase our capabilities for effective defense.

SEATO's Role Today

PRINCE WAN WAITHAYAKON

Minister of Foreign Affairs of Thailand

THE WORLD IS NOW ONE AND INDIVISIBLE and peace, too, is one and indivisible. A threat to peace in one part of the world has immediate repercussions on peace in other parts. Thailand felt the impact of the crisis in the Middle East, and all the more the shock of the crisis in the Far East. Although Quemoy and Matsu as well as Taiwan lie outside our treaty area, the Philippines, a party to Seato, is just next door to the scene. Such repercussions apply not only to the economic life of the various countries, in regard to which it is universally admitted that there is interdependence but also to general political stability. For a common danger exists: Communism, a well concerted danger, because the Soviet Union and Communist China closely coordinate their policies, especially the policy of Communist expansion.

Now the general impression, no doubt, is that the danger of Communist expansion in Thailand is a purely Chinese danger. But it is not so, as you will realize from a recent press report that a Soviet Embassy attache and a Tass correspondent had to be expelled from Thailand for subversive activities among labor, the press and students.

Nor is the Communist danger confined to Thailand. Burma is fully conscious of infiltrations into the disputed

border areas and of the subversive activities of Communist factions in Burma itself. That is why the Government will now be handed over to the Army to restore public tranquillity in order to enable free and fair elections. Burma, being a contiguous state to Red China, finds it expedient to follow a neutralist policy; and so does Laos, but the sympathy of Laos is with the West. Cambodia's neutralist policy appears to favor a closer cooperation with Peiping, while Vietnam is anti-Communist. Malaya has still nearly a thousand Chinese Communist bandits to suppress: it follows a neutralist policy but its sympathy is with the West. Singapore is still faced with a serious Communist danger; and so is neutralist Indonesia. The Philippines has overcome the Huks but a Communist attack on Taiwan would expose it to great danger.

My description of the position of the Communist danger is rather sketchy. But the fact is that the position itself is sketchy, that is to say, indefinite and uncertain. The neutralist countries themselves are not altogether happy with the term "neutralist," and so they sometimes call it "non-alignment," which is a purely negative attitude.

Now neutrality in international law constitutes not only a right but also an obligation to defend oneself in case of war. A neutralist State, which is not prepared to defend itself, is not really neutral. Switzerland is a classic example of a neutral power because it is prepared to defend itself; and if Thailand has joined Seato, it is for no other purpose than to be prepared to defend itself.

Let me indicate briefly the circumstances leading to the Manila Pact and to the participation of Thailand in it.

My country has been on guard, for many years, against Communist expansion. When the UN called on member states to help repel North Korean aggression in 1950, Thailand was one of the first to send troops, because we believe in the United Nations principle of collective security. But the Security Council was able to take the action it did only because the Soviet Union was absent from the Council table. When, however, the Soviet Union came back, it was plainly apparent that the action of the Security Council was frustrated by the Soviet veto.

Thailand soon found this out, for, after failing in its push to South Korea, Communist China turned towards Indochina, pushing Vietminh troops into Laos in 1953, under the cloak of the Communist Pathet Lao movement, which was in control of the Lao Provinces of Samnoua and Phongsali. They came to within 30 kilometres of Vientiane. Once over the Mekong, they would have been in Thailand, and there they would have found some 40,000 refugees from North Vietnam, who would certainly have joined them. Fortunately for Thailand, those troops withdrew.

My Government, however, was very much concerned because, although the United States had agreed to help us organize a small mobile armed force of 100,000 men with modern equipment and weapons, its organization would take some time, and even when such a force is organized, it would be able to defend Thailand only for a time. Thus there was a clear necessity for Thailand to seek a collective defense arrangement of some kind.

By that time, the United States, realizing the aggressive nature of Communist expansion, had, in addition to the Rio Pact with Latin American countries, concluded the North Atlantic Treaty and had also entered into mutual defense treaties with Korea, Japan, the Republic of China, the Philippines, Australia and New Zealand.

Then, in 1954, Vietminh troops came into Laos again and were actually found at Thakhek on the Mekong. The danger was immediate and Thailand had to appeal to the Security Council with a request, under the Uniting for Peace Resolution, that a team of peace observers be sent.

Our request to the Security Council obtained nine affirmative votes, with one abstention, but the Soviet Union vetoed it. That showed conclusively that the Security Council, owing to the Soviet veto, cannot be relied upon to discharge its responsibilities under the Charter in the maintenance of international peace and security. Hence the necessity to establish a collective defense organization under Article 51 of the Charter of the United Nations, and this was done, on 8 September 1954, by the conclusion of the Southeast Asia Collective Defense Treaty and the Pacific Charter between Australia, France, New Zealand, Pakistan, the Philippines, Thailand, the UK and USA.

The mention of the Pacific Charter indicates at once that there is a difference between Seato and Nato. The Pacific Charter is intended to emphasize the importance of the positive side of peace; that is to say, the importance of freedom and of economic and social well-being of the people as complementing the negative side of security and defense. But it is not a real difference. Both Seato and Nato promote freedom and economic and social well-being. In the case of Seato it is the promotion of freedom from colonial domination; in the case of Nato it is the promotion of freedom from Communist tyranny. In the field of economic and social well-being, the under-developed members of Seato need help for economic and social development, while the members of Nato, already developed industrially, need cooperation with a view to coordination and integration. But both organizations want freedom and economic and social well-being for their peoples.

Again, it has been said that in Nato an attack on one is an attack on all, while in Seato an attack on one would endanger the peace and safety of all who agree to act to meet the common danger in accordance with their constitutional processes. The proviso of acting in accordance with a member state's constitutional processes is also contained in the North Atlantic Treaty but it is relegated to an obscure place in one of the articles towards the end. With regard to the wording of the commitment itself, there is, of course, some difference. But, fundamentally, it is a matter of good faith and I have full confidence in the good faith of the members of our organization. Moreover, the situation, also, differs a little in the two areas. Western Europe is more exposed to a surprise attack, while the present danger in Southeast Asia is that of subversion much more than that of aggression. In fact, Seato can claim the credit of being an effective deterrent to overt aggression.

In what lies the strength of Seato? I think it lies in the fact that Seato is part of the defense of the Free World. Secretary Dulles has attended all Council meetings, showing the firm determination of the United States to support our organization. It is most gratifying to note the harmonious spirit of cooperation pervading the whole organization.

The Communists know that Seato is a serious organiza-

tion which will stand firm in its resistance to aggression. So they now concentrate on subversion, in regard to which each country itself has to take action, while, of course, useful information can be exchanged between members.

Subversion is a danger mainly to the Asian members of Seato and Chinese Communist subversion is aimed particularly at Thailand, where, out of a population of 22 million, there are three million Chinese, including children born in Thailand of Chinese parents. It has been reported that 60 per cent of them are now pro-Communist. I would say, however, that the vast majority of them only ask to be left alone to carry on their occupations and trade, at which they do very well, and, in fact, they play a very important part in the economic life of the country.

Then, also, it must be borne in mind that there are 600 million inhabitants in mainland China, and there is an autonomous Thai State in Yunnan preparing for a southward expansion. Add to this the 40,000 Vietnamese refugees with Vietminh sympathies in the Mekong frontier provinces of Thailand, and you can have an idea of the danger of Communist subversion in my country, where the Chinese secret societies and the secret political activities of the Chinese schools were already well known before the Chinese Communist agents came in to operate. In fact, at one time, the Chinese Communists had got hold of the very influential Chinese Chamber of Commerce in Bangkok but the Nationalists quickly won it back. Chiang Kai-shek's portrait in the shops, however, had been taken down and Sun Yat-sen's put up instead. News of the maltreatment of their relatives in mainland China and disrespect shown to them by their own sons sent there for education, have made them come around to Nationalist China and they now send representatives to the meetings of overseas Chinese in Taiwan.

Nevertheless, our police authorities have to be very vigilant, because the subversive activities of the Chinese Communists do not only take the usual form of press propaganda, corruption of young minds in Chinese schools and economic dumping but also devious forms of sabotage such as the counterfeiting of currency notes and illicit opium and drug traffic.

Fortunately for us, the Thai people, being Buddhists, are not prone to Communism and, with information furnished to them at the village level, they now know what Communism is and shun it.

Thus, although the countering of subversion is becoming more and more difficult, it is being undertaken with success, and it may be said that the defense task of Seato, whether it be defense against aggression or subversion, is being carried out with satisfactory results.

What about the promotion of freedom? The independence of Malaya and self-government for Singapore are a happy application of the principle of self-determination and the United Kingdom is to be congratulated on its wise policy, which is, no doubt, applicable to the remaining non-self-governing territories in the area as well.

In the economic field, the three Asian members of Seato, Pakistan, the Philippines and Thailand, have, at each Council meeting, asked for Seato economic assistance in addition to bilateral aid now received from the United States and from the Colombo Plan powers. The United States and the United Kingdom consider that the Seato powers should use the existing machinery of bilateral aid. The Asian members would like to have a Seato Development Fund. Of course, we are deeply grateful for the military aid, defense support and economic and technical assistance which we receive from the United States and the Colombo Plan powers. But it is economic development, above all, that is needed in order to secure stability and strength to the Asian members of Seato, as the situation in Pakistan now shows. Economic cooperation would also be an inducement for other countries in the area to join Seato, for an economic approach to them would be far more appealing than a political one.

My own view is that Seato should undertake the study of joint projects affecting countries in the area, while the financing of such projects could be left to the existing machinery of bilateral aid. Take a telecommunications project, for instance. The United States is already helping Thailand with its telecommunications project, but if we could have a joint telecommunications project for Thailand's neighbors as well, it would be better still. At this initial stage, the Seato label need not be used and the United States could do the coordination work in extending economic and technical assistance to each country concerned. With a common telecommunications system, closer cooperation between them will inevitably follow.

On the cultural plane, a round table on the subject of "Impact of Modern Technology on Traditional Cultures" was held in Bangkok, under the auspices of Seato, and it was attended by scholars from non-member countries, including India. It was a decided success. Seato is also assisting in establishing a Graduate College of Engineering in Bangkok, to which students from all countries will be admitted. Cultural relations can certainly be promoted by Seato for the whole area.

It is my belief that the best interests of Seato would be served by members cooperating with non-member countries in economic and social fields so that mutual confidence may build solid friendship. That is what Thailand is doing with its neighbors, with encouraging success. Thailand's neutralist neighbors understand the non-aggressive and non-provocative aims of Seato much better now. The Bandung principles of friendly cooperation include, as the fifth principle, "Respect for the right of each nation to defend itself singly or collectively, in conformity with the Charter of the United Nations." Even Cambodia stated in the General Assembly of the United Nations that she respected the decisions of neighboring countries to adhere to organizations for mutual defense, for she believed that it was the right of each one to act according to what he believes to be his own interest.

From what I have said above, it will be seen that Seato, while being a collective defense organization, stresses the importance of freedom and economic and social well-being, which, indeed, are the best weapons for preventing and combatting Communism. Thanks to the generosity and power of the United States, Seato in the defense of the Free World deters aggression, counters subversion, promotes freedom and develops economic and social advancement, for the stability and progress of the treaty area of Southeast Asia and the Southwest Pacific.

Whirlwind of Interacting Change

ROGER HILSMAN

Library of Congress

I THINK MOST OF US share a common image of the world in our time:

First, a continuing rivalry between East and West in which the danger of hot war may wax and wane, but is never entirely absent.

Secondly, a world in which the competition between the big two takes many forms—economic, psychological, ideological, and technological—and in which an overwhelming success by one side or the other in one of these non-military areas might act to upset the stability of the balance. One wonders, for example, what subtle effects the Soviet success in missiles and sputniks will have on the next crisis or on the cohesiveness of our alliance system.

Finally, a world in which there are a host of other kinds of tensions which may affect relations between the big two —rising nationalisms in Asia and Africa; rivalries between third parties, as between Nasser and Israel; attempts by petty dictators to play the big two off against each other.

A world, in sum, of military, ideological, and psychological tensions generating a whole galaxy of crises which call for policies of great insight and delicacy.

In the midst of this tension and rivalry there has come the flood of technological innovation—new weapons of horrendous power, carriers traveling at speeds the human mind can hardly grasp, electronic communications and control systems with potentialities that confound the imagination. The effect of this technological revolution is to cast the whole structure of strategic doctrine into disarray. And this in turn upsets the modes and structure of international politics itself.

I would also like to suggest that we are entering on a period of rapid development in tactical and strategic doctrine and that this will have closely similar effects to those flowing from technological innovation: giving new potentialities to military means; altering the relative power of the nations of the world, raising a host of new problems, creating both obstacles and opportunities for foreign policy.

Let me give you an illustration. By 1914 the machine gun had been perfected—mechanically. Tactical and strategic doctrine appropriate to the weapon was primitive. Doctrine at the time was the Napoleonic combination of infantry, artillery, and cavalry—a doctrine of mobility, as indicated by Schlieffen's plan for a wide sweep through Belgium and Foch's mystique of the offensive.

Eventually the machine gun changed all that. It became the central fact around which all tactics were organized. In the defense, the gun itself, rather than riflemen, repelled the direct attack, with riflemen arranged around the gun to defend its flanks and rear. In the offensive, instead of solid waves of fixed bayonets, the gun eventually came to move with the men—a mobile base of firepower in a new combination of fire-and-movement.

All this, of course, came later. In the early stages of World War I the machine gun was regarded as a special kind of artillery, firing over the heads of the troops. But in the accidents of battle, when the waves of infantry came on a well-sited gun, casualties were monstrous. In such a hothouse, new doctrine evolved quickly. It had a profound effect on tactics and by a subtle calculus on strategy and grand strategy.

Let me raise just one further question to underline how this might be applicable to our own situation. Many of the responsible people in America have assumed that an all-out, thermonuclear war will be solely intercontinental—a pushbutton war—or that the big weapons will never be used. The Army itself tends to accept this. They have tended to base their fight in the interservice battle on their role in limited wars and have claimed little more for themselves than a mopping-up role in all-out war, if it comes.

The Soviets, on the other hand, have apparently decided to hedge on this question of the nature of all-out nuclear war. Their preparations include rather large ground armies equipped with nuclear weapons and their air force preparations include a sizeable tactical air force. Now this may not indicate that the Soviets have thought the problem through. But you can be right for the wrong reasons and you can be lucky. The Soviets built 400 submarines for the wrong reasons, but the development of the Polaris-type missile is suddenly giving their submarines a new relevance. If it turns out that ground warfare doctrine can be accommodated to nuclear weapons after all, a failure to foresee the possibility on our part will be fatal.

The point of all this is that a breakthrough in tactical and strategic doctrine can have many of the same effects as a technological breakthrough, both in raising new problems and in effecting changes in the modes and structure of international relations.

Thus we can anticipate a period of rapidly changing issues—on the one hand, a staccato series of questions and problems arising from the shifting political context; and, on the other, an equally staccato series of political implications deriving from technological and doctrinal developments. And over it all will be the peculiar difficulties posed by overlapping phases. Due to the different lead times, the political and strategic thinking appropriate to one stage—for example, manned bombers and ground forces with only limited air transportability—will have to be going on at the same time as political and strategic thinking about a further stage, missiles and more mobile ground forces. The steps we take to meet one change in the environment will themselves change the environment further, making still further adjustments necessary. What we have is a whirlwind of interacting change—in tactics, in strategy, in international politics. We cannot control this whirlwind; we cannot even foresee its direction very clearly. But we have no choice but to try to ride it.

This, then, is our subject. It has at least the merit of scope; there is nothing about this topic that is either nar-

row or petty. But however humble or inadequate we may feel before such momentous questions, they must be faced. The only comfort we have is that even an imperfect insight may be the edge that spells the difference between survival and disaster.

Limited War Strategy

ROBERT E. OSGOOD
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IN MANY WAYS the historical experience of the United States in war and the intellectual, moral, and emotional attitudes of the nation toward military power strongly militate against the flexible strategy that the present imperatives of power and policy demand. They seem especially antithetical to a strategy of limited war. And yet it is remarkable how extensively, in the last few years, the American government and the informed American public have subscribed to the limited war thesis, in principle.

Thus there seems to be a widespread consensus, supported by official pronouncements, on several crucial tenets of this thesis.

The first tenet is that, now that massive retaliation would lead to equally massive counter-retaliation, we cannot safely rely upon our capacity for massive retaliation to deter a variety of limited aggressions.

The second tenet is that if we have to rely solely upon our capacity for massive retaliation, we will incur the serious military danger of piecemeal defeat by limited and indirect aggressions and the serious political danger of alienating our allies and leaving the free world vulnerable to Sino-Soviet political pressure.

The third tenet concludes that, therefore, we must supplement the great deterrent with other deterrents based on less-than-massive retaliation; and that, if deterrence fails, we must be prepared to repel lesser aggressions by means commensurate with the threat without bringing total war.

However, the widespread agreement on this thesis—in principle—is deceptive insofar as it conveys the impression that we have now met the challenge of limited war. It is deceptive in two respects. It conceals a significant area of disagreement and doubt about the specifics of strategic doctrine, and it conceals a large discrepancy between strategic doctrine and actual military capabilities.

The disagreements on strategic doctrine revolve, principally, around the following questions: In exactly what kinds of contingencies should we rely upon our capacity for massive retaliation to deter? In what circumstances should we be prepared to fight a limited war? How should we plan to fight limited wars under various circumstances —with what tactics, forces, and weapons systems? What should be our declaratory strategy regarding limited war?

The discrepancy between strategic doctrine and military capabilities results from the acceptance, on the one hand, of a pluralistic strategy—that is, one that recognizes the need for being able to meet a variety of contingencies by means short of total war, and appropriate to the circumstances, and the concurrent trend, on the other hand, toward monistic capabilities—that is, forces and weapons systems with a diminishing capacity for diversified military responses, especially in the realm of local ground defense and non-nuclear responses.

The fundamental reasons for these doctrinal disagreements and doubts and for the discrepancy between doctrine and capabilities are as easy to understand as they are difficult to remedy. They are, first, the tremendous inherent uncertainty that surrounds the question of "what strategy and what capabilities will achieve national security and support national policy?," and, secondly the inveterate tendency of democratic countries—and especially of a democracy accustomed to a luxurious standard of living—to resolve uncertainly in favor of strategies and capabilities that make the least demand upon the personal welfare of the individual citizen, while giving him the assurance of maximum security at minimum risk.

The uncertainty of security problems results from the obscurity of power itself. The visible symbols of power are tangible, but power itself is an intangible relationship of influence. Three circumstances aggravate the difficulty of calculating the imperatives of power and security in this stage of the Cold War: the tremendous rate of development and innovation in military technology; the increasing importance of deterrence and of the political and psychological effects that armed forces exert short of war; the accelerating rate of change in the political relations among nations and peoples.

At the same time that the problems of calculating the imperatives of security are increasing, the demands that security imposes upon the private citizen are aggravated by the rising cost of increasingly complex and numerous weapons systems, while the growing obscurity of military power and the mounting destructive capacity of weapons intensifies his longing for certainty and safety.

Where the imperatives of security are so problematical and the material demands upon the private citizen so obvious, it is natural for democratic governments to base military policies upon the most hopeful assumptions in order to minimize the pressing demands on the public. Although this means that security is based on a thinner margin of error, it is natural for democratic governments to stress the reduction of costs rather than the increase in risks.

It is in terms of these realities of military planning in a democratic society that we can best understand the dimensions of one of the most intractable strategic problems: the role of nuclear weapons in a limited-war strategy.

No one can be certain about the actual consequences of using various kinds of so-called tactical nuclear weapons. Are they compatible with mutual limitations upon war? If so, under what circumstances and by what methods? If

not how should we deploy them? Do they require less or do they require more manpower? If the other side has its own arsenal of tactical nuclear weapons, under what circumstances might we have an advantage in using ours, and under what circumstances might we suffer a disadvantage? What, if any, role can nuclear weapons play in countering those ambiguous, indirect, para-military forms of aggression that seem increasingly significant?

If the battlefield effects of tactical nuclear weapons are uncertain, their political and psychological effects are even more so. On the one hand, they seem to promise greater deterrence: but, on the other hand, they seem to carry a greater risk of unacceptable destruction if they have to be used. This creates a dilemma with significant political and psychological consequences.

Yet despite all these crucial uncertainties, it is evident that the role of tactical nuclear weapons has been determined less by a sober and concerted analysis of their multifarious military and political consequences than by limitations upon manpower and defense budgets imposed by democratic governments responding to popular pressure. At the same time, in order to appease the citizenry's longing for maximum security at minimum cost and risk, we have seized hopefully upon dubious axioms that lend the color of certainty to actual obscurity: firepower substitutes for manpower, if you can win a big war you can win a little one, and so forth. I fear that the actual result of the policies these axioms rationalize has been only to compound uncertainty.

Consider the contradictions that result: On the one hand, NATO governments rely upon the greater destructive potential of nuclear weapons to enhance deterrence at less cost in men and money and subscribe to a strategy that threatens to use these weapons even against conventional attacks. But, on the other hand, when they speak to their own people they try to appease the fears that such a nuclear reliance arouses by qualifying their commitment to use them except in case of "major" aggression, whatever that may mean. In order to reassure allies by giving them some choice between occupation and nuclear obliteration NATO declares the imperative need for a capacity to meet "less-than-ultimate aggressions" with "less-than-ultimate means" —that is, with "intermediate responses." But in order to enhance the deterrent effect of nuclear in the absence of an adequate capacity for intermediate and especially non-nuclear responses, NATO insists that a limited war in Europe is impossible. Clearly, we seek the best of all worlds through the magic of nuclear weapons: greater deterrence against a greater variety of contingencies, at less cost in money and manpower, and with no greater risk.

The fact is that in an area of vast uncertainty—the area of supporting national policy with armed forces—we are relying upon military policies that provide a perilously thin margin of error. The range of the kinds of contingencies for which we must plan the use of armed force is expanding. Surely this calls for increasingly diversified discrimination. Moreover, the test of our military establishment is not solely its adequacy in an overt clash of arms. It is equally its ability to support national policy short of war and to operate effectively in the whole expanding realm of the political and psychological exploitation of military power.

In principle we have now generally recognized the necessity of being able to meet a variety of contingencies by means short of total war.

In practice, we have been told that this is all taken care of by existing policies, which are in fact an extension of the trend since the Korean truce toward strategic monism and inflexibility.

When will we begin to support strategic aspirations and pretensions with actual capabilities? The question searches the capabilities of democratic society itself.

Political Objectives

PAUL NITZE

The Johns Hopkins University

THE PROPOSITION that the mission of the armed forces is to support the United States policy hardly needs to be debated. What does merit discussion is the content of United States policy as it bears upon the mission of the armed forces.

In recent years it has seemed to me that there have been two schools of thought as to what United States policy is or should be about. One school tends to emphasize United States interests, United States security and the direct threat to that security posed by the hostile power and intentions of the Soviet-Chinese-Communist bloc. From this point of view allies are important to us only because of the contribution they can make to our interests and to our security. The mission of our armed forces under this concept is basically defensive. It is to keep the Russians and those whom they control from expanding into areas which would threaten our direct interests and our security as a nation.

The other school maintains that United States policy is, or should be, positive and not merely negative and defensive. It maintains that United States interests and United States security have become directly dependent on the creation and maintenance of some form of world order compatible with our continued development as the kind of nation we are and believe ourselves capable of becoming. They further maintain that such a system cannot be created or maintained without a protracted and creative effort on the part of the United States—an effort which goes far beyond mere holding operations against Communist encroachments.

I propose to say a few words about the historic justification for this second point of view and of the implication for the mission of our armed forces which it implies.

The supporters of this second view, point out that in the hundred years from 1815 to 1914 a degree of order in the world was maintained. The balance of power among the European states preserved a large measure of stability. No single power could aspire to world hegemony. England,

MR. HILSMAN

DR. OSGOOD

MR. NITZE

DR. EMERSON

DR. MORGENTHAU

with firm control of the seas, could act as a check on the ambitions of any of the land powers. England was not strong enough, and did not aspire, to dominate the European continent. She acted as a balance wheel. Economic institutions based on the gold standard and centering on the London capital market provided an economic framework within which large portions of the world, including the United States, were able to make tremendous forward strides in developing their economies. The principles of the common law and of political institutions based on the notion of public responsibility began to spread out to the far corners of the world. Above all, wars, up to 1914, were kept limited as to their geographic extent and the objectives of the participants.

The two world wars shattered this system. The balance of power in Europe, and the very empires on which it depended, were destroyed. The power of England was weakened. A strong United States and a bitterly hostile Russia came to the fore.

This second school of thought says that today the fundamental issue in the international arena is not merely that of United States security; it is the issue of who it is that will construct a new international order, appropriate to today's world, to take the place of the one that was shattered in the two world wars.

They maintain that, whether we have been fully conscious of it or not, what we have been doing over the last 12 years is exactly that, contesting with the Soviet Union and its allies, whether it will be they, or we and our allies, who will succeed in constructing such a new system.

What are the main elements of the structure we have been trying to erect, and to defend while it was being erected? This new structure had to have its political, its economic and its military aspects. It had to provide for certain worldwide functions. It had to foster closer regional institutions within the worldwide system. A unique role in this system had continuously to be borne by the United States because we alone had the resources and the will to tackle the job. And it had to be constantly defended against the hostile and destructive efforts of the leaders of the Soviet-Chinese-Communist bloc who were dedicated to the construction of quite another system.

An important part of the structure was its economic part. This had its worldwide aspects geared into the United Nations structure. The International Monetary Fund provided an institution looking toward greater stability of the world's currencies necessary for the financing of the world's commerce. The International Bank for Reconstruction and Development was to provide a pool of capital to flow to those areas needing capital and able to make sound use of it. The arrangements under GATT, the General Agreement on Trade and Tariffs, were to move toward the reduction of administrative barriers to international trade. These international institutions were reinforced by regional and bilateral actions such as the Marshall Plan, the OEEC, the EPU, the Technical Assistance Program, and the Colombo Plan. And we have tried to support these international, regional and bilateral approaches through United States economic policies generally consistent with our new role as the world's leading creditor nation and principal reservoir of capital and of technology.

In the military sphere a similar structure compounded of international, regional and individual arrangements was gotten under way. The heart of these military arrangements had to be strength at the center, strength in the United States itself. Supplementing United States strength at the center, an immense effort has gone into building strength at the periphery, through NATO, through the MDAP program and through our bilateral arrangements with the ROK, the Chinese Nationalists, and Japan. Much of the non-Communist world is tied now together through the system of alliances. Even those parts outside the alliance system are given a substantial measure of protection through the strengthening of world acceptance of the principle of restraint against the use of aggressive force.

It would be inaccurate to say that United States policy has always followed a pattern consistent with the second school of thought I have been describing. From time to time it has reverted to statements and actions more consistent with the first school of thought, the primacy of direct United States interests. I believe these reversions to a more negative philosophy have hurt us in our relations with our allies and with the free but uncommitted nations of the world. I further believe they have contributed to a sense of uncertainty and confusion as to what our policy is about. Undoubtedly some of you will differ with that judgment.

Assuming for the moment that we were to decide firmly in favor of the second school of thought as a basis for our policy, what would be the implications for the role of our

armed forces? Several points come to mind.

In the first place it would follow that at least one of the rules of our armed forces is to support, in conjunction with the military forces of other free nations, certain principles of international action consistent with the creation of a world order—a world order compatible with the survival and development, of free, independent, but responsibly cooperating nations.

One of these principles, now widely accepted, is that armed forces not be used as an instrument of territorial expansion across recognized international boundaries.

Another principle for which there is a wide underlying demand at the grass roots level of world opinion is that nuclear weapons not be used as an instrument of national policy.

A third principle might be that where the use of military force becomes necessary, every effort be made to so limit its employment as to reduce the destructive impact on the inhabitants of the area of conflict to the minimum possible.

The other role of our armed forces would be to deter the Soviet-Chinese Communist bloc from upsetting the world order we are trying to construct and the principles on which it is based.

One final point. The Communists boast of the system of world order which they are promoting. They call it Peace with a capital P and define it as being the elimination of all centers of power which might dare to challenge their scientifically determined social wisdom. They say the establishment of this kind of Peace is, in the long run, inevitable. Unless we have an alternate conception better qualified, in the interests not just of ourselves but of the rest of the world as well, to succeed, it is possible they might be right.

American Attitudes

WILLIAM EMERSON

Yale University

WE SPEAK TODAY of the application of military force in support of policy. Our recent American history reveals that we have too often used military force in fact as a substitute for policy. Indeed, if it fell to my lot to give a motto to American war in the twentieth century, I would paraphrase Ovid's comment and say *bellum omnia vincit* (war conquers all). And we might remind ourselves too of Clausewitz's remark that "war can never be separated from political intercourse, and if it does we have before us a senseless thing without an object."

Now the reasons for this failure to use military force constructively are manifold. Too much so indeed to permit us to discuss them today as fully perhaps as they deserve. As a military historian, I am sure they are partly purely technical in character. A witty Englishman experienced in the problems of war production once observed that in war, strategy and production were closely linked together and yet found it difficult to cooperate because they had strikingly different periods of gestation. Production, Sir Oliver Lyttleton said, had a period of gestation comparable to that of an elephant: where strategy's period of gestation was comparable to that of a rabbit, producing litters of nasty little problems at regular and distressingly short intervals.

Partly, I think too, the reasons for these failures are doctrinal.

Powerful though these technical and doctrinal factors may be—and I don't deprecate their importance—the root of the matter, I'm convinced, lies not here but in the political sphere. Partly it resides, I suppose, in what we recently learned to call civil-military relations. The fact is, that the political leader is ever unwilling—indeed he is unable—to commit himself to courses of action far in advance of the event in the way that sound strategical planning most often requires. The military men devote their energies carefully and commendably to the project of bringing the mountains to Mohammed. And Mohammed, alas, like all politicians, is devoted to the politician's task of listening to the grass grow.

But there are other, I think deeper, reasons, than those arising from the flaws in our civil-military relations. The fact is, that Americans adhere to a philosophy of politics which lays its emphasis more strongly upon rights than upon duties. And which, as a consequence, unfortunately makes no room for considerations of power and especially of military power, in the play of international politics. As we know so well, Americans have always tended to view the use of power as an emergency item only and not as an integral part of the political process. And indeed, they've been led to wonder whether the use of power might not in itself be evil, therefore culpable. We have, as a result, used power awkwardly and hesitantly and not very constructively in this century. And it is an ironic fact that mistrusting it though we do, we have nevertheless been guilty of expecting both too little and too much from the application of military force. Peace we prize so highly that often we are unwilling even to consider the conditions on which we accept it. And we deny as a matter of principle the right of sovereign states to resort to force under anything less than the ultimate provocation.

That is the issue at any rate as it has been put to us in the Formosa Strait today. That was the issue as it was put to us at the time that the Suez Canal was nationalized and during the melancholy events that followed. And that is the issue which has threatened us more than once with what one student of these affairs has called "disaster on the instalment plan." In war, on the other hand, we've regarded military force as the ultimate, and total victory as the only possible course and goal of policy. Force, as Mr. Woodrow Wilson said, "force to the utmost, force without stint of limit, the righteous and triumphant force which shall make right the law of the world and cast every selfish dominion down into the dust."

We have tended to look upon political states as natural, indeed as moral entities, as the constituent parts of an international order in some sense preordained, rather than as

they are, the playthings of history and the children of military power. We have, consequently, found it difficult to accommodate our policies to change, to the decline of old powers and the emergence generally in some violence of new ones. And there is much that we refuse to recognize.

Further, viewing the state as a moral entity we have found it difficult satisfactorily to define our vital military interests and difficult particularly to concert them with our political interests. I think American policy with regard to Spain is one example of this difficulty, and many others no doubt will occur.

I end with a question: I ask whether the basic question arising from this subject is not in a sense a moral question arising from the fact that the cost of action in modern diplomacy lays upon the American people a moral burden more burdensome to them than all of their other burdens.

When we survey our present circumstances and cast our minds forward to the portending future, we see an inherently unstable and perhaps a disastrous power balance in the world. Europe, for the moment, in the eclipse, the Middle East and Asia in ferment, and from Africa, even from Latin America, ominous rumblings. These factors are no doubt the result partly of social forces, no doubt partly of war and its consequent dislocation. In large parts of the world they are the result of propagation of our own American dogmas and doctrines of politics supplied in school and out of school.

Whatever their causes, these present situations can be upheld in many cases only by the direct application, sometimes by war, of American military forces. And yet this need contravenes directly the whole American view of life and of the proper order of world politics. In any crisis, then, our duty clashes with our desire, and American leadership feels, and is bound to feel, the same harsh pressures which beat around the heads of Mr. Neville Chamberlain and Mr. Edouard Daladier twenty years ago at Munich.

It should be said that much that has happened since 1945 suggests that old American political ideas are changing slowly under the pressure of the modern world. Ideas always lag behind facts, and the experience of Korea, of Lebanon, of Quemoy suggest that if the lessons of the Rhineland have not been learned the follies of it have very largely been averted. But lest we be too optimistic we must too record the sad reversion at the time of the Suez Canal nationalization crisis—a reversion to the well-known formulae of a tired Wilsonianism, with little relevance to the facts, serving merely as a substitute, and a poor one, for forethought and for policy. Military history reveals that nations are very rarely given the option of choosing or not choosing whether to go to war. In *Realpolitik* it is less a question of peace or war than a question of the terms on which war is likely to be forced upon one.

The principal concern of statesmen and strategists cannot be merely to avoid war; it must be the application of national policy and national resources to influence the terms on which war might come; to influence the conditions, not the mere fact of peace; to influence that vital middle range of security issues where American statesmanship has ever been at its weakest. Mr. Eisenhower was in one sense firmly in the older American tradition when during the political campaign of 1956 he set peace as the unique goal of his policy and went on to say: "It is not enough that the elders promise to their children peace in *our* time. It must be peace in *their* time too, and in their children's time. Indeed, there is only one peace and that is peace for all time."

It is difficult for an American not to respond to the idealism in this idea and in these hopes. It is difficult, on the other hand, not to see how little likely they are ever to be achieved in the real world of contending and sovereign states of the approximate future. And this, alas, being so we may perhaps conclude that a sounder guide and standard for American policy was set by General Washington in his farewell address, when in a world no less distracted than ours by wars and threats of war, he stated that American policy should remain free "to choose peace or war as our interests, guided by justice, shall counsel."

Effects of Nuclear Weapons

HANS MORGENTHAU

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IT IS OF COURSE a triviality to say that atomic power has revolutionized both military strategy and foreign policy. But it is perhaps necessary to say a word by way of introduction about the ways in which atomic power exerts its revolutionary influence on military strategy and foreign policy.

The first of those revolutionary influences is a continuation and an aggravation of the revolutionary impact which the machine gun has had upon military matters. For the machine gun constitutes a turning point in the field of military strategy. Up to the invention of the machine gun, as a matter of principle, one soldier could at best put out of commission one enemy soldier, be it by a spear or an arrow, or a sword, or a shot from a musket and even through artillery, considering its great inaccuracy in early periods of history.

The machine gun introduced another principle into military strategy, in that one man by one action can eliminate a multiplicity of enemies. The atomic weapon is the logical continuation and, you may say, the consummation of this trend, in that a very few can eliminate by one action hundreds of thousands, if not a few millions, of enemies. It is this enormous aggravation of the destructive power of atomic weapons which has had a revolutionary impact upon the relationship between military and foreign policy.

Throughout history until the beginning of the atomic age there existed a rational relationship between the objectives of foreign policy and military force used as a means toward the achievement of those objectives. A nation during the overwhelming period of history, had a rational

choice between pursuing its objectives in the international arena by peaceful diplomatic means or by resorting to military force.

In other words, from the beginning of history to the beginning of the atomic age, nations acted like gamblers who are willing to risk the loss of a more or less considerable fraction of their resources. The atomic age has completely changed this rational relationship between the use of force and the objectives of foreign policy. This is probably the only revolutionary change which has occurred in the field of foreign policy from the beginning of history. For when the result of the use of force is total destruction, the elimination even of the distinction between victor and vanquished, the use of all-out force becomes the epitome of irrationality.

And it is this dilemma which confronts all statesmen and military leaders today. It accounts both for the rigidity of foreign policy, the fear to depart from tried patterns of conduct which at least appear to minimize the risks of foreign policy. It also accounts for the great and unprecedented self-restraint used by both sides in the use of military force. The Korean war, whatever one may think of its military and political conduct, is a prime example of quite unprecedented self-restraint by both sides. The sparring today in Formosa Strait is another example of the same self-restraint.

It is against this background of the revolutionary change which has occurred in the relations between military force and foreign policy that we must consider the concrete effects of atomic power upon the conduct of foreign policy in our time. We are in the midst of a change in the nature of world politics which confront us with new, and in all likelihood much more serious, military and political problems than have confronted us since the end of the Second World War. In retrospect the first decade following the Second World War may well look like a relatively easy, tranquil and orderly period of history, as compared with that which we are likely to have entered already.

The first decade following World War II was characterized by a bipolar structure of world politics which had replaced the multipolar structure of previous periods of history.

From the Second World War there emerged only two powers of really first rank—the United States and the Soviet Union. And all the other nations were so diminished in power that they could hardly be called nations of the second rank. In other words, the two nations that counted were the United States and the Soviet Union, with the United States having an additional advantage in having a monopoly of atomic weapons which counteracted the superiority of the Soviet Union in traditional weapons and manpower. In consequence of this clear and obvious bipolarity of power there existed a very strong tendency towards the formation of a two-bloc system. That is to say, the two power poles acted very much in the nature of magnets attracting to a greater or lesser degree most of the other nations of the world.

Now this structure of world politics, of which I have necessarily given a very much over-simplified picture, is in the process of being replaced by a new type of structure, the contours of which are vaguely visible but the specific and concrete characteristics of which are still hidden from our eyes. First of all and obviously, we are still living in a bipolar world, but one which is characterized not by the atomic monopoly of the United States counteracting the superiority of the Soviet Union in other respects, but one characterized by an atomic balance of power in which both United States and the Soviet Union have the capacity of inflicting mortal damage upon each other. At the same time the superiority of the Soviet Union in traditional weapons has not been matched by any similar increase in the conventional weapons at the disposal of the U. S.

Furthermore and perhaps more important, we are at the beginning of a phase in the atomic age in which more than two nations (and I count Great Britain as merely part of the United States in so far as atomic weapons are concerned) will have atomic weapons. Tomorrow France will have them. The day after, in all probability, Germany and Italy will have them. And we can easily foresee a very short interval of perhaps five or six or ten years after which any number of nations will have them. Now this situation will confront the world with a problem infinitely more serious and more threatening to mankind than any which has ever confronted it before. For the relative order and stability which, despite all criticism against it, has existed and still exists in the world today, have disappeared once any nation governed by any kind of knave or fool can threaten, perhaps not the world with destruction, but at least with starting a chain reaction from which there is no escape.

If today an atomic bomb should explode—let me say, in Grand Central Station in New York—everybody would know whose atomic bomb it was and retaliation would be immediate and devastating. It is exactly this certainty, existing on both sides of the Iron Curtain, which has prevented and is likely to prevent an atomic bomb to be deposited in Grand Central Station. But if ten or 15 to 20 nations will have atomic bombs, and an atomic bomb explodes in Grand Central Station, who can tell whose atomic bomb it has been? Atomic dust shows no particular national characteristics. And against whom are you going to retaliate? Are you going to drop atomic bombs all over the place, or are you going to drop no atomic bombs at all? Whatever you do, you are confronted with a dilemma which staggers at least my imagination.

It is in the face of this seemingly irreversible development that I think it is necessary to take to heart what Mr. Nixon has said about the second school of thought which has at times influenced the foreign policy of the United States. The refusal of our government to countenance the use of any kind of force, except in self-defense against physical aggression, is part of a general philosophy which takes into account the developments to which I have referred. For the use of any kind of force in the service of national policies short of self-defense carries within itself the implication of generating into the use of greater and greater force until in the end the suicidal force of all-out atomic war, will be used. The likelihood of such a war today is small, but when any kind of dictator or crooked politician can use this thing for his vile purposes, then indeed it is necessary to erect an absolute barrier to the use of force in the service of national policies.

The Why of Strac

GEN. BRUCE C. CLARKE

C.G., Continental Army Command

SINCE THE END of World War II, our major military effort and the larger part of our military budget has been directed toward providing a general war capability, both in deterrent forces and those designed to fight an all-out nuclear war should this become necessary. There is no doubt that possession of a nuclear superiority and the accepted capability of the Strategic Air Command to employ these weapons have been a sobering influence on potential aggressors and nothing I say should be construed to indicate that there is not a continuing need for such forces as a matter of national survival. However, I do feel that a preoccupation with general war would seriously reduce emphasis on the necessity of coping with lesser forms of aggression.

Despite an initial nuclear monopoly and a continuing superiority in atomic strike power on the part of the United States, communism managed in the ten-year period between 1946 and 1956 to gain control of more than five million square miles of territory inhabited by more than six hundred million people, by means short of general war.

Despite the growth of Soviet nuclear capability, it is doubtful that the Soviets would deliberately initiate a general atomic war. This does not, however, preclude limited aggressions. In a climate where both the U.S.S.R. and the U. S. possess powerful nuclear forces, the emphasis shifts from general war to limited wars with limited objectives. With the increasing Soviet capability, a rising level of Communist provocation rather than a reduction of activity appears probable. Current and past events bear this out.

In the face of this threat, what types of military forces are required?

We need deployed forces in being in critical areas of the world to provide the Soviets with convincing evidence of our determination, to bolster the morale of our allies, and to fight in place, or be redeployed rapidly if necessary. Parenthetically, it may be noted that no Soviet aggression has been started in areas in which there are United States troops. For this reason, side-slipping of these forces in a limited war situation can only be done to a limited extent and at some risk to our general war posture.

We need to extend the effects of these deployed forces by providing assistance in matériel and training to indigenous forces. Strong, well equipped indigenous forces will reduce the probability of aggression and at the same time aid in slowing aggression, should it occur, for a sufficient time to permit deployment of early ready forces.

We need a mobilization base sufficient to maintain a general war posture even while participating in limited wars. This places particular emphasis on the requirement for reserve component forces in a high state of training and properly equipped.

We need a flexible logistic support system with overseas stockage to permit support of forces deployed anywhere.

We need joint and combined plans and doctrine for limited war. This includes the need for joint training exercises on a frequent basis. Effective action cannot be based on improvisation.

Finally, we need a strategic strike force sufficient to enable *rapid reaction* by use of *measured force* where and when required. This force must be able to accomplish assigned tasks with or without the use of atomic weapons.

In the requirement for a strategic strike force, I have emphasized the terms "rapid reaction" and "measured force." Let's discuss the latter first.

In limited war, the importance of the appropriateness of measures taken, or threatened, cannot be overstressed. Mere shows of military power of any handy variety are ineffective if the power demonstrated is not of the type which would be effective if used. Army forces can be selectively employed to conform to the requirements for specific military or political objectives. Army forces, appropriately deployed and supported, could have helped in curbing Communist conquests.

Further, the need for restricting the area of operations, the achievement of less than total political objectives and the tempering of the type and amount of force applied, may place limitations on the employment of air and sea power.

Now let us discuss rapid reaction. The ability to react rapidly is the most important single requirement in implementing limited war policies. The mere fact of rapid counteraction has a major bearing on the effectiveness of our response.

Aside from the military advantages of rapid counteraction, the political advantages may be crucial in determining whether a war can, in fact, be kept limited or even whether or not we participate. When ground is lost and with each day that passes, the effort required to reconstitute the status quo may present costs we are unwilling to accept. This generates a requirement for maintenance of military forces in a high state of readiness. At least a portion of these forces must be lightweight air-transportable elements with high firepower capability and backed by readily available airlift and a flexible logistic support.

While I do not intend to go into details on the strategy of limited war or techniques of limitation, the question of whether or not atomic weapons would or could be employed in such wars is one that inevitably arises. A decision to initiate the employment of nuclear weapons by the United States could only be made after the most searching consideration of all of the factors involved.

The use of such weapons defensively for tactical purposes against purely military targets would not necessarily expand the conflict into one of a general nuclear war; however, this possibility must always be recognized.

In any event, it appears obvious that our strategic strike forces must be equipped, trained and ready to fight with or without nuclear weapons and must be well indoctrinated on political and military objectives and limitations.

While I have suggested that the major combat components of a strategic strike force are necessarily Army troops, the force must be made up of combat and service troops of all of the services. The Army cannot, unilaterally, develop all of the elements required. However, the Army can exert every effort to produce the type of ready force required to meet its obligations and the Army can (with the help of the Association) make the people and the Congress aware of the additional requirements which must be met to prepare for limited war.

It was the clear recognition of the limited war threat and the force requirements which I have outlined that led to the creation of the STRAC. STRAC is a force consisting of two airborne and two infantry divisions with combat and service support elements. Its composition and readiness objectives are designed for rapid application of appropriate types of force anywhere that the situation may dictate.

In conditions short of an alert, command of the elements of the STRAC is vested in the continental armies under my command, in the Commanding General of the Army Air Defense Command, and the Commanders of the Technical and Administrative Services. Coordinating authority has been delegated to the Commanding General of the XVIII Airborne Corps for certain planning and for determination of readiness posture of STRAC units. After elements of the STRAC are deployed to an overseas theater, command of the force passes to the command of the JCS-established command in the area of operations.

During the past year, major advances have been made in the capability of STRAC to meet the Army objectives. At the present time, major elements of the STRAC are ready to depart home stations in a matter of hours and could be delivered ready for combat to any point in the world in a matter of a few days. The remainder of the STRAC could be deployed by combined air and surface lift shortly thereafter.

We have modernized the organizational structure of STRAC units and we are modernizing the STRAC equipment to provide the improvements in fire power, communications and tactical mobility required for limited or general war. Because of budgetary limitations, I do not believe that our rate of modernization is commensurate with the need. I should like also to point out that the capability for rapid deployment can only be realized if we have immediately available air and sea lift in the necessary quantity and of the most modern quality.

While the current STRAC has a greater combat potential for limited or general war—atomic or non-atomic—than any peacetime army in our history, there are many ways in which this potential can be increased. Among these are:

Development of modernized sea and air lift.

Development of a greater awareness in the minds of the people of the need for forces specifically tailored to meet the most probable threat—limited war.

Acceleration of improvements in weapons systems, tactical transport and communication equipment.

Improved logistic support systems.

Strict adherence to priorities and elimination of the "nice to have."

Modernized reserve components and increased self-reliance in these forces.

And recognition of the fact that while the primary mission of the STRAC is readiness for immediate deployment, budgetary and manpower limitations will require the assignment of other missions to STRAC units. This means that we must increase the effectiveness of every hour of training and devise means for covering these missions when STRAC is deployed.

The What of Strac

MAJ. GEN. ROBERT F. SINK

C.G., XVIII Airborne Corps

THE STRATEGIC ARMY CORPS is made up of units in the Continental United States Army that are prepared for rapid deployment for operations anywhere in the world.

To be specific about this organization, the major combat elements are the XVIII Airborne Corps Headquarters as the Command Echelon; 101st Airborne Division, the 4th Infantry Division, the 82d Airborne Division, and the 1st Infantry Division.

These forces are known now by their numerical divisional designation, such as 101st Airborne Division Force. With that division force are programmed sufficient combat and technical service support troops to make the 101st Division Force capable of independent operations.

The majority of [STRAC's] technical service units, when committed, will operate under the control of the 1st Logistical Command, stationed at Ft. Bragg, N. C., and now presently assigned to STRAC. In addition, there are an Infantry Brigade, an Armored Combat Command, an Armored Cavalry Regiment, and the XVIII Airborne Corps Artillery with battalions assigned from all over the country.

All of these units are spread throughout the country. There are 53 posts or stations that have STRAC units. The responsibility for operational readiness of these elements lies with the army commander in whose area they are.

Now for a little bit of the planning requirements that our headquarters has. With respect to planning for air movement of STRAC units, we have been authorized direct coordination with MATS. This is a logical arrangement because the XVIII Airborne Corps has the mission and the know-how to conduct airborne movements. In the case of surface movement, our job is to recommend the priority for arrival in the objective area; and the coordination for movement by MSTS is through command channels to the Department of the Army.

I would like to talk a little about what we are doing today to forward the know-how required. In order to provide my headquarters the necessary information and to become acquainted with the commanders of STRAC units,

Headquarters CONARC has designated the XVIII Airborne Corps as the responsible agency for conducting logistical readiness visits to all units of the STRAC. We have to date visited many of these units. These visits have enabled my people to become acquainted with the logistical readiness, the status of personnel and the equipment of these units. These facts are reported to CG CONARC. Directives from CONARC to the Armies and this headquarters allow solutions to our mutual problems in making the Strategic Army Corps the force that is skilled, tough, and ready around the clock.

The How of Strac

MAJ. GEN. WILLIAM C. WESTMORELAND
C.G., 101st Airborne Division

YOU ARE PROBABLY FAMILIAR with our experience in May of this year when an element of the 101st was called upon to provide a task force of two companies for departure immediately to Puerto Rico. At about 1400 on 13 May, I received an alert order from Headquarters, CONARC. At 1630, two and one-half hours later, the first plane, a Hercules C-130, was loaded with troops and equipment and proceeded to taxi to the runway. At 2225 that evening, approximately six hours later, this lead plane of the 314th Troop Carrier Wing, touched down at Ramey Air Force Base in Puerto Rico. By daybreak, the Task Force was closed—1,600 miles from its home station.

This Task Force of the 1st Battle Group, 505th Airborne Infantry consisted of 560 men, a full complement of weapons, 59 vehicles, one helicopter, a basic load of ammunition, four days of rations and all the necessary equipment including parachutes to permit the force to make an airborne assault if required. This performance typifies the speed of reaction with which the division can move when provided with the essential tools for the job. Most significant is the continued excellent support and cooperation of the Troop Carrier Wings of the Tactical Air Command and the Military Air Transport Command.

Prior to May of this year, our plans called for the lead elements of the Division to move out in six hours following an alert. On the occasion of the Puerto Rican exercise our first troops moved out in less than half of the required time. Thus, you can see we priced ourselves into a higher market and therefore have now prepared ourselves to move out at any time within two hours following the word "GO."

How is this rapid movement possible? Basically, it is possible because one reinforced battle group is designated at all times as the division alert force. Their training is so scheduled that they are always immediately available. This important mission is rotated each two weeks at which time the seriousness of the responsibility is dignified by a colorful ceremony. Within the alert battle group, one company is prepared to move to planeside at the Campbell Air Force Base, some three miles away, at a moment's notice. The men of this company are in barracks or training near-by. Their individual equipment is packed, their combat vehicles are loaded with equipment and supplies to include ammunition, and their Post property is inventoried and prepared for pick-up. They are ready to roll. A second company is alerted to follow by one hour and the entire reinforced battle group prepared to be at planeside three hours later or six hours from the time of the initial order. The remainder of the division is geared to follow at the same rate of flow. Our capability to move exceeds at this time the estimated availability of aircraft to move us. Our entire alert system is predicated on the belief that orders received will require immediate response without loss of motion. Frequent rehearsals have reduced the seemingly complicated procedures to routine operations. In this connection we have drawn upon the readiness experience of SAC.

We find the "Pentomic" divisional organization well adapted to our mission. It is strategically mobile, flexible, and equipped with weapons and vehicles capable of supporting a variety of missions.

Several innovations have been introduced to assure good readiness administration and simplify the preparation and maintenance of records. Noteworthy among these is the preparation of troop rosters and equipment lists by the use of office machines. Whereas it took more than two hours to type an airplane manifest for a company in the past, it

GEN. CLARKE

GEN. SINK

GEN. WESTMORELAND

GEN. SANFORD

is now done by this equipment more accurately in less than four minutes. The preparation of rosters no longer stands as a bottleneck in the readiness chain. The maintenance of individual records involves keeping up-to-date a complex of data including wills, powers of attorney, immunization shots and plans for the disposition of automobiles and other personal property. As an example of the magnitude of this requirement, since 1 July the medics of the division have administered and recorded more than 75,000 shots.

To train a command for combat is a large task, but to maintain it indefinitely in a high state of training and readiness, is yet a more difficult undertaking. Such a task is analogous, to preparing the Army football team for the Navy game and postponing the contest to a day in the indefinite future to be selected without warning by the Navy.

Our training program is intense and never ending. It includes an abundance of field training, frequent parachute jumps and air movements to points distant from the Fort Campbell reservation, and periodic tactical tests. We strive to make our training realistic and interesting and to work closely with our Air Force teammates.

Readiness tests and inspections are methodically made by trained teams within the division. From time to time higher headquarters checks on our state of readiness.

Indoctrination and motivation are continuous. It begins the day the volunteer enters the division jump school and is emphasized throughout the division by the Troop Information Program which is run by me and the commanders of all units. Dependents living in the local area are briefed on our mission—its importance, and its requirements. So are the civilian employees and garrison troops that provide support locally to the Division.

Each officer and trooper is keenly aware of the mission of the Division which has been succinctly defined to them as "To be prepared to move any time, anywhere, and fight." The "Screaming Eagles" are proud of their mission and proud at this time to stand ready as the vanguard of STRAC. We consider ourselves "Freedom's Fire Brigade."

The Logistics of Strac

BRIG. GEN. TEDDY H. SANFORD

Deputy C/S for Logistics, USCONARC

ONE OF THE PRINCIPAL PURPOSES of my talk will be to demonstrate to you that we are attempting to think through the hard, cold facts of logistics as they pertain to STRAC readiness and capabilities. To demonstrate this to you, however, it will be necessary for me to discuss certain problem areas in logistics. I do not discuss these problems for any reason other than to demonstrate our cognizance of them. Some of these problems are very intricate of solution. Some of these problems have a limiting effect upon tactical and strategic capabilities. Some of these problems have no precedence for solution under peacetime conditions. Nevertheless, our considered judgment is to the effect that all of these problems are capable of solution and, furthermore, are being solved at such a rate as to prevent logistics from becoming an unduly limiting factor on tactical and strategic capabilities of the STRAC.

A secondary reason for discussing the logistics implications of STRAC preparedness is to demonstrate to you and to others, I hope, that the Army is the only service that is capable of solving these problems, and hence, the only service capable of fielding and sustaining a force with the same tactical combat capability. The public at large is familiar with the fact that our STRAC consists of a Corps Headquarters and four combat divisions. What is overlooked by the uninitiated, is the existence of almost 400 supporting units to provide the staying power in the field for these combat units. What is further overlooked, is that behind the forces in the field stands our great depots and ports system in CONUS. With the sea and air lift provided by our sister services, we have in existence the logistics organizations and tools for supporting indefinitely our Strategic Army Corps under conditions of administrative deployment in friendly lands or under combat conditions on unfriendly shores. We have the tools and we have the troops. Our duty is to organize these logistics tools and troops into a state of logistics readiness for the support of the tactical plans.

The first problem we faced in achieving logistics readiness was, of course, the ever-present one of acquiring and maintaining technical proficiency by the individuals and the organizations. The specialists must be trained to be specialists and the organizations must acquire a technical capability for which they are ultimately designed. In general, this technical capability, both individually and organizationally, is adequate, although, of course, improvement can always be made.

The second problem we faced in achieving logistics readiness is a very real one, which is unique to the concept of STRAC and is not readily apparent.

It concerns itself with the conflict between the necessity for immediate deployment and the requirement for the continual use of equipment for peacetime training and operations. Peacetime training and maneuvers are essential to insure technical and tactical proficiency of individuals and units. Continued use of equipment in training, however, produces wear and tear and renders some equipment inoperable until repaired. Heretofore, deployment of units has been preceded by a measurable period of preparation which could be employed for the purpose of rehabilitation and repair or replacement of worn equipment. Accordingly, standards governing the status of equipment for overseas shipment were stringent and very high. To implement this policy for STRAC units, would mean, because of stringent requirements for immediate or short notice readiness for deployment, that replacements for equipment must be made as a general rule well before the normal peacetime

wear-out period. The expense involved in this policy is clearly apparent. Some middle ground, therefore, between the highest possible standards of equipment readiness and insufficient residual combat serviceability must be achieved. We have faced up to the problem by authorizing the STRAC unit commander to take with him under emergency conditions any equipment that will serve him in the objective area until such time as replacement or repair can be reasonably expected to be accomplished. It is recognized that the deployment overseas of an organization with equipment at reduced standards increases the requirement for resupply in the objective area. However, the alternative is either delayed deployment capability or greatly increased replacement costs for an indefinitely continuing time in CONUS.

The next problem we have had to face in achieving logistics readiness is an extremely intricate one. It has to do with establishing and maintaining the "mission loads" of repair parts for supporting units. Technical service supporting units carry with them a prescribed number of days of repair parts for the equipment of the combat and other units in the force. These mission loads of repair parts vary from burners for field ranges to tank engines and artillery tubes, and each of these mission loads of spare parts must be tailored exactly to the types and the numbers of equipment in the hands of the units that are being supported. When we realize, as is true, that types, makes and models of equipment vary on an almost daily basis, you can see that these mission loads of repair parts must be constantly purified. This problem is being resolved by the establishment of a central agency using electrical data processing machines, operating under the Commanding General of the XVIII Airborne Corps. This agency will be practically in direct communication with all elements of the STRAC on an almost daily morning report basis, securing information on changes in equipment from using units and providing this information to supporting units and depots.

The last problem we have had to solve in achieving logistics readiness has to do with the achievement of logistics flexibility in terms of the capability to support various task force organizations of STRAC. It is in the solution of this problem that the logistics planners will exercise their time-honored prerogative to slam the brakes on the G3 tactical planners.

Without regarding the hard cold facts of logistics, there are untold variations of task forces that can be made up from the combat elements of the STRAC troop list. At one end of this spectrum the tactician and strategist can envision four separate divisional task forces, each capable of independent operations—each in a different objective area—and yet all capable of being amalgamated on short order into a single corps force for employment in a single objective area. Support of this concept is a logistical nightmare.

At the other end of the strategist's planning spectrum lies the concept of one force of four divisions successively deployable in division increments on a cumulative basis, all in the same pre-determined objective area. Support of this concept is the logistician's dream.

The solution of this problem can only be achieved in terms of specific operational plans. It appears obvious that for the time being, at least, acceptable plans must lie, at the best, somewhere between these two extremes.

Logistically, STRAC is deployable starting tomorrow or any other time. With time we will continue to improve and refine our logistic posture. Given the sea and air lift, we can place the STRAC in any objective area and support it in overland operation for hundreds of miles. We have the units to operate ports or to unload in the stream if ports are not available. We can operate railroads. We have long-haul units for highway transport and units to build roads behind the advance of our combat units if highways are not available. We can maintain our equipment, care for our sick and wounded, provide burial for our dead, and move the thousands of tons of everything so essential to our combat units for sustained combat.

I think we can state with some confidence that logistics readiness is not a limiting factor to STRAC capability.

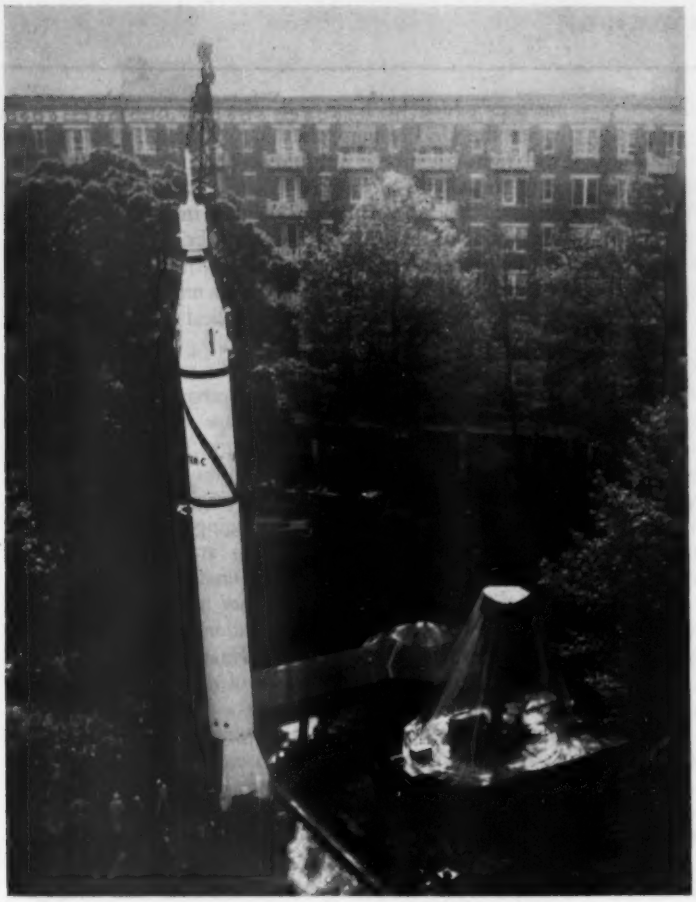
Receiving Line. Lt. Gen. Walter L. Weible, Executive Vice President of AUSA; Secretary of the Army Wilber M. Brucker; Maj. Gen. Anthony J. Drexel Biddle, President; Gen. Lyman L. Lemnitzer, Vice Chief of Staff, USA; Col. Willard F. Rockwell, Chairman of the Council of Trustees; Mr. Samuel F. Downer, Vice President.

Recovered Redstone. AUSA's President, Maj. Gen. A. J. Drexel Biddle, peers through the framework of the Redstone engine which was recovered in the Atlantic Ocean after a firing test from Cape Canaveral. The engine, on display in the lobby leading to Sheraton Hall, attracted the attention of all delegates and visitors.

Report to the nation. Secretary Brucker, General Trudeau and General Biddle appear on NBC's Today show during the AUSA meeting.

Annual Meeting Pictorial

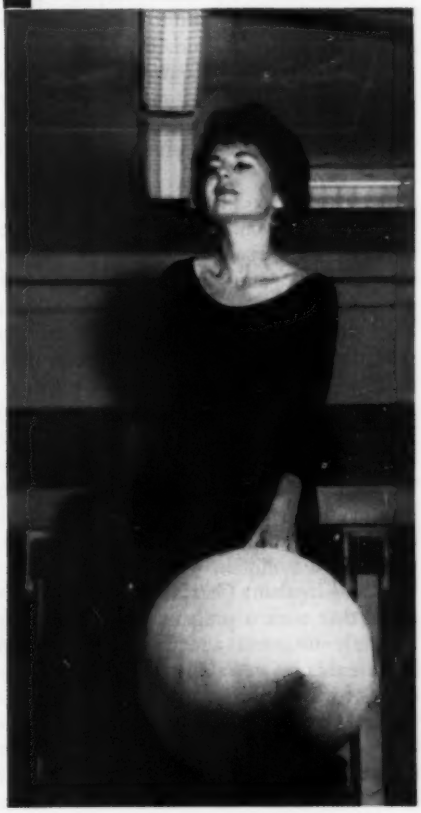
Retreat parade honors AUSA. The Military District of Washington honored the AUSA with a retreat parade on the Sunday preceding the opening of the Annual Meeting. The 1st Battle Group, 3d Infantry (Old Guard) marched in review and the United States Army Band entertained with a concert preceding the review. On the reviewing stand from left to right: AUSA's President, Maj. Gen. A. J. Drexel Biddle, Asst. Sec. of the Army Frank H. Higgins, Gen. John E. Hull, Gen. Charles L. Bolte, Lt. Gen. Walter L. Weible, Lt. Gen. Carter B. Magruder, Lt. Gen. Milton G. Baker, Maj. Gen. John G. Van Houten, and Maj. Gen. Harry McK. Roper.



Frontispiece. An Army Jupiter C missile dominated the front lawn of the Sheraton-Park during the Annual Meeting. The plastic bag covers a new Army radar.

In full control. While visiting the industrial displays, the Army's Vice Chief of Staff, Gen. Lyman L. Lemnitzer, stepped into a helicopter to try out the controls.

Question Box. The Answer Man begs off on the question posed in the above picture. But he says if you'll look below you'll see the answer to your question of what ignited the press photographers into action. The Answer Man followed this young lady about the Annual Meeting and discovered that she was "Miss A. C. Spark Plug." He has a good idea of why she is posing on that Dart missile and confides that her real name is Miss Dale Conner.



Army Research & Development

LT. GEN. ARTHUR G. TRUDEAU

Chief, Research and Development, D/A

THE ARMY'S RESEARCH AND DEVELOPMENT program receives its requirements from two principal sources: first, we must know the capabilities of the enemy so that we can provide our forces with superior weapons and equipment, and second, we must equip these forces to be able to perform the tasks which are derived from our missions.

I cannot emphasize too strongly that we must "know the enemy." We must know what he is developing in weapons and equipment and exactly what his military capabilities are. We cannot risk basing our national defenses on his supposed intentions.

We must not forget why our strength must be maintained in the Free World today. The Communist threat has increased immeasurably since World War II. They have conducted a relentless campaign to nibble the peaceful countries of the world to death—piecemeal.

Within the framework of this Communist threat, the Army must develop the weapons and equipment to win in battle—the means to move, shoot, communicate, and defend ourselves regardless of enemy aircraft or missiles; to close with enemy ground forces and destroy them if forced into war.

Now how does our research and development program accomplish this overall Army mission? We do it by applying our resources over a wide variety of research projects and development programs. This year we have the largest funded program in the Army's history. It will amount to almost one-half billion dollars. This is a tremendous sum but remember that the Army's requirements today are more extensive than ever before.

In order to keep pace with the expansion of technology in our country, we conduct basic research in seven areas. A substantial amount of this type of research is done by 123 colleges and universities in this country as well as by qualified scientific people and organizations overseas. As a matter of fact, we have programmed some three-quarters of a million dollars in countries to include the United Kingdom, Germany, Austria, Japan and Italy. I think that such a program as this is essential because it not only uncovers new potentials for military matériel, but it enhances our ability to provide for that essential element of warfare, the trained fighting man.

The first area deals with human factors. No matter how effective or lethal we make our weapons, we find that a limiting factor in use of those weapons is man. The weapon isn't any more effective than the soldier who has to operate it, or maintain it, or service it. We are working on tests which we hope will enable us to identify in advance the kind of man, the kind of soldier who can, and will, fight when he is put into action.

In the second area, our medical research program must improve the care we give our sick and injured, work toward prevention of disease and injury and bring about improved military medical equipment.

Nuclear effects research has been oriented toward tests to obtain factual data on the medical effects of nuclear weapons.

The fourth area is polar and arctic research. For several years the Army has conducted a program of research in Greenland, primarily by the Corps of Engineers. The objective has been to discover new scientific facts and find new means of providing facilities and other logistical support for military forces in polar regions. The success in these fields has been very encouraging. As a result we are broadening our research in such areas to increase our capability for operations in those environmental extremes.

Rocket exploration of the upper atmosphere has been conducted as part of the International Geophysical Year at Fort Churchill in Manitoba, Canada. These launchings will give the scientists hundreds of different instrumented observations of such phenomena as air temperature, density, moisture, cosmic radiation, and wind velocity. This is not a part of the satellite program, however, since many of the basic atmospheric conditions are being checked at distances ranging from fifty to one hundred miles from the surface of the earth.

Chemical and biological warfare is a most vital part of our research. We believe that chemical and biological agents have great potential in any type of warfare. Chemical and biological agents usable against personnel, animals and agriculture are being carefully studied. Defense against these agents is very difficult but very important and we feel that we must vigorously push this entire program in view of indications of Russian intent to employ some or all of them in war.

In the last area, nuclear reactor research, we have the means of creating power by the revolutionary source of atomic energy. I know you are familiar with the prototype of atomic power reactor that we have in operation at Fort Belvoir. It is turning out two thousand kilowatts a day. A second reactor is being built for installation at Fort Greely, Alaska. This is a more portable design than the one at Fort Belvoir, but it will still have to be emplaced in rather large sections. Our goal is to have a truck-mounted power plant that can be towed over any terrain that can be traversed by a normal truck-tractor combination. This is the kind of advancement that will certainly affect logistics and transportation of the future. It has a major effect on arctic and desert operations as well as an effect on potential operations anywhere in the world.

Now to the applied research and development part of our Army R&D program. These are the areas that apply directly to the soldier in combat. They are mostly concerned with hardware. In fact, I would like to stress the fact that much of this research is oriented toward that lonely man on the battlefield. We tend to forget him in our curiosity about the more spectacular and exotic space developments that hit the newspaper headlines.

We also have an interesting program in the area of simplified food logistics. This is based on precooked dehydrated foods to reduce the need for refrigeration and food preparation facilities, and to conserve space and weight. Along this same line is the program on the radiation preservation of food. Irradiated foods are not toxic, harmful, or radioactive, and so far appear as wholesome or better than foods preserved by other methods.

New protective clothing and equipment. . . . This includes field clothing for arctic, temperate, desert and jungle use; space heating equipment; lightweight durable tentage; the vapor barrier insulated boot; protective body armor, the combat vehicle crewman's helmet and specialized survival food packets.

Seldom in history has a weapon or a weapons system in itself been decisive. More often what has been decisive is the tactical system developed to employ a weapon or a weapons system. Part of the improvement in our tactical systems designed to integrate the atomic weapon and missiles has been increased emphasis on ground as well as air mobility.

Two ground vehicles that will assist the new Pentomic Division are the Rolling Fluid Transporter and the Armored Personnel Carrier.

As part of our continuing program to provide the Army with an aircraft which will have vertical take-off and landing characteristics like a helicopter, but the fixed-wing characteristics of an aircraft in forward flight, we have several test beds under development. As the name implies, the purpose of the test bed is to permit testing of the approach used in constructing that particular type of aircraft.

Battlefield surveillance is always a critical factor for any combat operation. It is one of the first steps in producing intelligence for the commander so that he can plan a tactical operation properly. Surveillance is also a difficult field for development because it must necessarily be based on enemy capabilities—in equipment, weapons and mobility.

First, we have new air vehicles to do this job. The Mohawk is a fixed-wing aircraft designed for shallow reconnaissance penetrations. It will cruise at two hundred knots and take off and land on unimproved fields in the combat area. It can carry visual, photographic, infra-red and radar reconnaissance devices. The pilot has armor protection.

Next, our surveillance drones are rapidly being improved. We have an interim model, the SD-1, which can use cameras and infra-red detectors to seek out enemy targets. It speeds over the enemy terrain at one hundred eighty miles an hour, both day and night, controlled by radio signals. This is an interim model and it will be replaced by faster jet-propelled models.

In the communications-electronics field we are developing communication equipment possessing self-contained cryptographic facilities and capable of handling the increased communications which will be encountered on the future battlefield.

Basic to all hardware development in the communications-electronics field is the development of new electronic components, tubes and materials. While by themselves these items may not appear spectacular, it is only through their development that important improvements in end items of equipment are made. A recent advance along these lines is the development of a molecular amplifier. Such an amplifier would possess an extremely small amount of internal noise, and its successful development could completely revolutionize the field of radar in terms of the power, size, and range available to detect enemy missiles.

We now are assigned under the new National Aeronautics and Space Administration two lunar probes and their instrumentation, and three satellite projects. In addition, we have other projects in conjunction with the Advanced Research Projects Agency. These include the anti-ballistic missile defense, military satellites, and the one and one half million pound thrust booster for a space vehicle.

I realize that this has been an extremely broad coverage of the Army's Research and Development effort. My primary purpose was to familiarize you with the program that will affect the men, organizations, and weapons of the future. Mark it well. The effort and interest that you express in this field may be a determinant of the Army's success for years to come.

The Army Missile Program

MAJ. GEN. JOHN B. MEDARIS

C.G., Army Ordnance Missile Command

WE DARE NOT RESTRICT our defensive capabilities to conventional forms of warfare when there is ample evidence to indicate that space technology can introduce radical innovations. We must be ready to cope with hostile action in or from space including surface to surface missiles which can transport nuclear warheads or other types of destructive payloads over great distances, military satellites, inter-planetary ballistic missiles, and enemy space defense weapons systems.

The need exists today for a coordinated space defense system which can detect hostile space activities, assess their capabilities and effectively neutralize them. Because the velocities involved will be several orders of magnitude greater than other transportation systems, such a system must function in minimum time with maximum automation. A satellite intercept capability is a first requirement and we are exploring this need in our missile systems.

The situation assumes more ominous aspects when viewed in terms of the demonstrated capabilities of a potential aggressor whose recent achievements in technology reinforce the international threat in all areas of human activity.

It is against that background that I will discuss advances in the state of the rocket art and some possibilities inherent in the further utilization of rocket propulsion and guidance for transportation purposes. In doing so, I would suggest,

that you appraise them against three paramount objectives:

First, the Army's mission to help defeat aggression of limited scope and purpose wherever the threat occurs.

Secondly, the Army's mission to help defeat enemy ground forces in total war and to hold the ground wrested from them.

Thirdly, to achieve maximum exploitation of rocket capabilities in support of these missions.

This has been a year of momentous developments in rocketry. One of these was the deployment of the Nike Hercules surface-to-air missile system four months ago and the related acceleration of production by contractors.

Another historic event was the fielding of the Redstone missile system with NATO shield forces in June. Redstone is the first of the large U. S. ballistic missile systems to become operational, the first to be fired successfully under simulated tactical conditions by Army troops. By all odds, it is the largest and most destructive weapon ever provided by the Army.

We will provide, for deployment on schedule, the Army's version of the intermediate range ballistic missile, Jupiter, to the Air Force whose squadrons are now training it.

We have issued the Little John rocket to the 101st Airborne Division for training and the development of combat techniques. The Sergeant missile system, successor to the Corporal, is scheduled for operational forces in the near future. The solid propellant Pershing ballistic missile is under development as the eventual replacement for Redstone. Progress has been accelerated in the Nike Zeus system, which we regard as the eventual balancing factor against the advent of the long-range ballistic missile. We are bringing on the mobile Plato system as the field counterpart of Zeus.

We have met the twin requirements for rapid deployment and maneuverability, dictated by the atomic battlefield, by building mobility into all our missile weapons systems from the smallest to the largest. The advantages inherent in the guided missile are being exploited to the fullest consistent with the requirements for each system—increased range, greater and more flexible striking power, availability without regard to weather or terrain conditions.

We are ever mindful of our total responsibility for every system, from the inception of an idea to the continuing supply, maintenance and support of the system in the field. It is never forgotten for an instant. It is there from birth to death. As long as one of these weapons is in the hands of troops to insure that they are supported technically, that they have the parts, the information and the technical skill required to maintain the weapon.

In the technical areas our continuing objectives are to achieve simplicity, ruggedness, pinpoint accuracy, and reliability. We are seeking higher specific impulse in advancing the development of improved solid and liquid propellants and propulsion systems. We are seeking further weight reduction by such directed investigations as miniaturization, improvements in guidance and control and counter measures immunity. These are rather obvious goals and I would emphasize that we are not interested in perfection for its own sake rather than for a purpose. There is a danger involved in development against a preconceived desire for maximum technical efficiency and the danger is loss of flexibility. I would point out that if you provide twice the load-carrying capability required for nuclear application, you have probably quadrupled the usefulness of the weapon by allowing substitution of other types of firepower and appurtenances and the same logistic support. I am suggesting, in short, that we should state our needs in terms which will serve both purposes at minimum cost.

Looking now toward the future, I can give you some inkling of our interests. One urgent need is for the manportable guided missile to provide the infantryman with a light, accurate, lethal weapon to serve a variety of purposes. It must be small enough for him to handle, light enough to be carried under the hardships imposed by combat, instantly responsive, simple to operate, and sufficiently rugged to require little or no maintenance. It should defend him against armor, personnel or air attack, help him to knock out fortified positions.

Two years ago I suggested to this Association that the long range guided missile could transport men, matériel and supplies. I again invite your attention to this application, which would present an enemy with a threat at his back which he could not ignore.

In the first month of the year the Army achieved a technical feat without equal in its long history by launching first of the Explorer. These orbital vehicles have sparked a great deal of speculative interest in their potential—military as well as scientific. Satellite technology can greatly reinforce the Army's capabilities. Some of the areas of logical interest may be defined.

First, to obtain meteorological data pertaining to surface weather. An earth satellite equipped with suitable electronic devices could provide the most dependable and most complete coverage of the factors which combine to influence weather. From its vantage point in space it could transmit instantaneous report of cloud cover, in the absence of which weather forecasting is still something less than exact science.

Secondly, to provide a world-wide communications network, whose advantages in the conduct of military operations would be obvious. As a relay point in space, a satellite can provide a link by which to transmit radio or video signals between any points on the earth's surface, or between earth and points in space.

All of these things are feasible within the state of the art today. In fact, the possibilities are so enormous that it is becoming a serious question whether the technician is out in front of the strategist and the tactician, and that is the basic challenge I put to you. I believe it is a situation which could have grave consequences. It plainly indicates urgent need for a change in concepts so that we avoid the defining of specific items of military results we want. Our needs must be stated in terms so broad that they will stand over a sufficient span of years to permit solution. Along the way we can anticipate useful by-products of forward-looking, long-range investigative and developmental efforts. We have recently seen an instance of the kind of imaginative programming we need in the assignment by the Advanced Research Projects Agency to my command of the development of a giant booster system capable of producing 1,500,000 pounds thrust.

The Army In Space

DR. ERNST STUHLINGER

Army Ordnance Missile Command

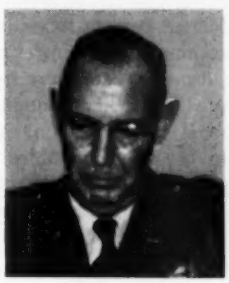
THERE ARE OFTEN PEOPLE who ask: Why should the Army concern itself with the scientific aspects of the exploration of space? I believe that the answer should be this: In our modern times, there is absolutely no area of technical or scientific endeavor in which the military can afford not to be interested. It is certainly true that nobody knows exactly today what implications, with all the details, the exploration of the moon will have on our lives. But it is equally true that the military will and must take a vital interest in this exploration and in that of the surrounding interplanetary space. This interest must be even greater if the others should be there before us.

During the war, after I had been drafted in the Army to work at the German rocket center at Peenemuende, I visited Professor Geiger, inventor of the Geiger counter. He showed a polite interest in my work, but it was apparent he was not greatly impressed with its potential. "Ah," he said, "these rockets cannot be used for anything. Something burns at the tail and then one of these things starts flying wildly into the air—nobody knows where."

GEN. TRUDEAU

GEN. MEDARIS

DR. STUHLINGER



GEN. GIBB

But suddenly his eyes lighted up and he said with passion: "But if you could send up one of those rockets vertically and have a counter put in it before launch, and if you could measure the cosmic rays high above the highest layer of the atmosphere—that would be unbelievable and something wonderful."

Two years later at White Sands we launched dozens of old V-2s bearing scientific instruments—and even a little live monkey, which re-entered the earth alive.

We were primarily providing the means of getting the experiments aloft. Then, as now, the experiments came largely from educational and research institutions. The Army was at that time laying the groundwork for a research program that continues to occupy us, and will require our efforts for many decades in the future.

By 1950 the last of the V-2s had been launched and the Army development team was about to undertake a new, major weapons project—the Redstone. In the Fall of 1954, the Redstone having been successfully launched, the Army started on work to orbit an earth satellite, using the tested and reliable Redstone as the first stage of the launching vehicle. This work was halted the following year when Project Vanguard was originated. But the original work done on the Army's Project Orbiter stood us in good stead when, on November 8, 1957, we received authority to prepare for satellite launchings.

Eighty-four days later, Explorer I was in orbit. We have since launched two others, all packed with important space experiments of the IGY research program.

I will brief you on the results of the Explorer program.

First, micrometeorite impact detectors carried aboard Explorer I as a secondary experiment substantiated our belief that these particles offer no hazard to an orbiter.

Second, it has been proven that man can easily control the temperature in a space vehicle to that range desired for human existence in comfort. Our intention with the first Explorers was to maintain the temperature between 0 and 65 degrees Centigrade. We have done that primarily by the type of exterior materials chosen, and by the selection of the firing time, this being the controlling factor in the sunlight/shadow ratio to which the satellite is subjected. Average temperature in Explorers has been 20 degrees.

Third, the data which have thus far been generated reveal that the density of the air at 200 to 300 kilometers is about 40 per cent higher than was anticipated. We have also learned that the earth is apparently ½ to 1 per cent less curved than we previously thought.

But the really astounding finding of the Explorers is in the field of high altitude radiation. The evaluation of these data gathered by the Van Allen instruments is the most fascinating and most unexpected result of the IGY.

At altitudes of 300 to 1800 kilometers Explorer I registered an intensity of radiation which had been expected. Above 1000 kilometers, or about 600 miles, irregularities become apparent which Dr. James A. Van Allen first attributed to faulty instrumentation. The analysis from Explorer III showed similar effects in a more precise way. It was not faulty instrumentation, but the radiation was so strong that a saturation of the instruments occurred. The instruments were overwhelmed—completely blocked.

The ABMA and University of Iowa worked together to rapidly design and build still another satellite which would give even more valuable information. On July 26 Explorer IV was launched, containing not one but four radiation counters which would provide a more accurate count and also differentiate between the levels of energy. This is the most advanced radiation equipment yet devised. Explorer IV transmitters have ceased to function, as expected; the picture resulting from the still incomplete evaluations is most impressing.

As soon as the satellite climbed to above 600 miles in its orbit, the radiation intensity mounted extremely fast. It was many hundreds of times greater after a few hundred miles. And when it reached the most distant point in its orbit, about 1,300 miles, radiation was 10,000 times greater than when it began to enter the high radiation belt.

Evaluation of these data is very time consuming and difficult, as all data have to be arranged not only according to time and altitude but also according to geographical and magnetic longitude and latitude.

There can be no question that this radiation find is a tremendous discovery, rivaled by very few scientific developments. A few people in the scientific community were quick to predict that this will confine man to earth, in the foreseeable future and perhaps forever. I do not believe this.

Looking now quickly to the future, there are a myriad of space research programs which must get forward on a broad front if we are to achieve our exploratory goals with a minimum of expenditure of time, effort and resources. And these programs are going forward, thanks to a new alertness in our defense organization and citizenry at large.

More exact determinations of satellites' orbits will give better data regarding the configuration and distribution of masses of the earth and the structure of the atmosphere. We will be able to investigate and to explain physical and chemical processes in the highest layers of the atmosphere. We shall learn to understand the energy balance of the atmosphere.

The effects of the rays of the sun which are of basic importance not only for the atmosphere of the earth and the earth's surface but for all living existence on the earth will be clarified. Details of the intense electron radiation, its distribution of energy, its origin, its distribution in space, its reciprocal effect on the atmosphere will be the object of intensive research. We will be able to measure cosmic radiation and radiation from stars to a greater extent. We shall not only have satellites but also missiles, carrying instruments and transmitters into the region of the moon, to the moon itself and finally to the neighboring planets of our solar system.

The Army's initial and gratifying successful steps in the exploration of space have been rewarded by new projects. We are far from idle. You have heard, no doubt, of some of our new space assignments—including lunar probes. In recent weeks you read of the job assigned to ABMA by the Advanced Research Projects Agency to develop a super booster of some 1,500,000 pounds thrust for future space exploration. There are some other promising projects.

You, as members and friends of the Army, can be justly proud of the leading role your Army is taking in the inviting and terrifically challenging World of Tomorrow.

Experiments in the Future

BRIG. GEN. FREDERICK W. GIBB

Commanding General
Combat Development Experimentation Center

IN THE USE of new weapons, missiles and matériel, to influence the wars of the future, should they come, one aspect of the basic philosophy of the Army remains unchanged in that man must continue to operate the machines and must be capable ultimately of physically taking and occupying those areas of the earth considered essential for the control of any potential enemy.

As a consequence it is incumbent upon the Army to develop ways and means by which the products of scientific and technological progress may be translated into combat forces, organized, trained and equipped in such a way that victory will be assured at the earliest possible time with minimum cost in human lives and matériel resources. This demands the development of concepts of military operations of the future which take full advantage of all new or projected weapons and equipment and which result i nthe molding of organizations and techniques.

Some basic concepts and theories of ground warfare of the future are described but not defined in such terms as combat surveillance, communications, firepower, mobility, command and control, and security and logistic support.

Obviously progress in military science and in technology cannot be controlled to the extent of simultaneously developing balanced capabilities in all of these areas.

At any given point in time, for example, weapons which could be developed might far exceed our ability to acquire targets, and lack of knowledge of the enemy might in turn restrict the use of the mobility needed to exploit the fire power. Likewise, communications and the ability to exercise command and control might be a limiting factor in our capability to exploit firepower and mobility.

It has been stated that dispersion is a means of attaining security on the battlefield of the future. However, lack of adequate combat surveillance, communications, mobility and command and control might limit the degree of desirable dispersion and correspondingly increase the vulnerability of our forces to atomic or non-atomic fires, or to conventional ground action. And last but not least, logistic factors could well establish limits in all of the other six areas. The end result of this imbalance might tend to reduce our overall capability to a mean level, lower than that which is desired or required to implement future concepts.

The concepts of future operations which incorporate the matériel that is or will be available and which provide guidance for the development of new matériel are theoret-

ical until they have been proven in war or, in the absence of war, until they are examined and experimented with on a simulated battlefield which portrays all aspects of a real battlefield except for bullets and the fear real bullets engender in the minds of the fighting men.

It is the task of CDEC to create this battlefield, to accept the characteristics of weapons and matériel which are projected but which do not yet exist, to marry these characteristics to future organizational and operational theories and to coldly and objectively measure the results.

* * *

CDEC's role is to take theory, which has been developed by other agencies in the Army's combat development system, and apply it to the ground. All aspects of future combat to include new organization, tactics, weapons and equipment are placed in context one with the other and with the mission to be accomplished, in two-sided mock battles.

We eliminate prejudice and opinion by placing on the shoulders of the scientists the requirement to quantify, and objectively measure and analyze the results of the battles. As in any experiment we attempt to eliminate chance by repetition and to decrease the learning factor, by changing terrain courses, enemy situations, and enemy reactions. No attempt is made to fight the battles of previous wars but rather military science is being applied to the future to determine what should be done to improve our capability.

Probably the most unique aspect of CDEC's operations is the integration of military and scientific effort. The scientist at CDEC is employed to apply the methods of science in the study of military operations. He does not function as a specialist in any one of the distinct disciplines of science; instead he applies the fundamental techniques of all sciences. He operates in many fields, including measurement, experimental design, data collection and analysis.

The scientist at CDEC is *not* working on hardware improvement. He is *not* trying to develop a better munition, a better radar, or a jeep that flies. Instead he examines military concepts, organizations, doctrines, and procedures for future combat by *experimental* means.

* * *

We have found that the concept, the soldier and the scientist must come together at the very beginning of a cycle of experimentation and that a closely integrated effort must be maintained throughout. Separate military and scientific action may occur during the cycle but in general joint teams are formed and joint procedures are followed.

In order to provide the proper environment for the generation of factual and valid data during experiments, CDEC has created a simulated battlefield, with a realistic enemy. A jeep for example may represent a future armored vehicle of lighter and more versatile design. Helicopters of conventional design are utilized in lieu of flying platforms and so forth. Although the characteristics and effects of future weapons are applied in experiments, weapons and vehicles presently available must be used, but modified to give positive identification to the troops in the field.

In order to accurately measure the cause and effect on this simulated battlefield, an extensive instrumentation program is under way. At present, locations of all elements of the opposing forces are recorded by reference to *coded* stakes spaced throughout the area and along roads. This system will eventually be replaced with electronic equipment that will automatically and continuously record the exact location of all elements and automatically portray this information in our control center.

A communication relay system has been installed to insure a high degree of reliability in communications between the control center and the controllers and data collectors in the field.

The specific findings of experimentation to date are classified; however, some of the specific areas investigated to date may be of interest.

In combat surveillance, communications and mobility, we have developed several new techniques of employment and determined certain basic requirements that must be met if the over-all capabilities are to be in balance and the concepts made workable.

We have acquired a significant insight into command and control problems which will face the future unit commander when dealing with varying numbers of units over wide spans of operations in dispersed formations.

We have investigated the techniques of dispersion and their impact on the requirements for improved surveillance, firepower, command and control, and mobility.

These investigations have been made with organizations which do not exist today but are the result of today's thinking of organizational trends for the future.

Although we have had no logistical troops with which to experiment we have carefully recorded supply, maintenance and evacuation requirements and have investigated the problems incident to the distribution of supplies to widely dispersed units.

Currently our resources are devoted to an aircraft vulnerability experiment. The Army anticipates the use of a high volume of low and medium performance aircraft in both enemy and friendly portions of the forward battle area. It is incumbent on us to determine the probability of survival of these aircraft when operating in such an environment as well as the best techniques to be employed by the aircraft to reduce their vulnerability.

Anticipating the availability of logistical troops and certain essential combat surveillance equipment with key operating personnel, our next major step will be to experiment with completely integrated combat groups backed up by combat and logistical support through successively higher echelons of division corps and Army.

This thumb-nail sketch of CDEC's activities is admittedly incomplete. The fundamental factor which should be remembered is the dynamic approach the Army is taking toward the future. The bulk of the Army today stands ready to fight with today's weapons anywhere in the world, and its role must remain unchanged in a world charged with tension. These forces, however, through the continued efforts of the Combat Development System and the Research and Development Program, can be assured that today's weapons and equipment will be replaced before they become obsolete and that new tactics and organizations will move hand in hand with the new matériel.

ARADCOM's Growth Potential

LT. GEN. CHARLES E. HART
C.G., U. S. Army Air Defense Command

THE ARMY'S concept of an effective air defense is a combination of men, weapons, and determination that will prevent the enemy from making a successful attack from the air. It must not depend upon any one weapons system, and must have depth, flexibility, and a growth potential to meet the ever expanding threat.

Every element in this concept is essential to an effective defense, but if one must be selected for emphasis it would be the last—the growth potential. This growth, this continued evolution to more effective weapons, this continuous attention to the needs of the future—coupled with meeting the needs of today, is the story of the United States Army Air Defense Command. . . .

The enemy military threat is a serious one. North American targets certainly are of interest to the Soviet planners inasmuch as these targets are obstacles to the Soviets in their long range aspirations to rule the world. We anticipate that the enemy, if he elects to attack, will employ his most effective weapons against us and also will seek a mass effort coupled with surprise.

Today's threat of atomic destructive power stands as the equivalent of several megatons of TNT and there is no theoretical upper limit.

The speed and range of the delivery systems have grown in like proportion. Missile delivery systems making use of short range submarine missiles are with us today. Intermediate range and intercontinental systems will be with us in the not too distant future.

In the interim period we have to combat improved aircraft with longer ranges and higher ceilings.

Soviet nuclear attacks against portions of the United States are currently possible. Eventually the USSR will be able to deliver missile attacks, submarine, aircraft or ground launched against practically any major target.

To summarize the threat, I would like to quote from the "Rockefeller Report" on the problems in connection with the defense of the United States:

"The power of modern nuclear weapons is such that 50 such weapons, falling on our 50 most important metropolitan areas, would bring under attack half of our population and three-quarters of our industry. A successful attack on these 50 centers would produce at least 10 million dead, 15 million injured from blast and heat, and another 25 million casualties from fallout."

Please keep in mind this summation of the physical threat that we are facing today. Colonel Priest and Lieutenant Colonel Titley of my staff will cover, in some detail, our reaction. Since it is a progressive one, so will be our presentation—air defense today and air defense of the future. In conclusion I will discuss the strategic aspects.

Air Defense Today

COL. PERRY B. PRIEST
U. S. Army Air Defense Command

THE ARMY AIR DEFENSE SYSTEM of today is the result of over forty years of experience and knowledge, marked by continuous growth and improved effectiveness.

As far back as 1944, the United States Army proved conclusively, at Antwerp, its ability to cope with massive air attacks. Ninety-five percent of the V-1 missiles fired at this important port were successfully destroyed during 1944-45, keeping this area open for essential operations.

At the same time, the German Army, using equipment similar to ours, set a remarkable record against our own air force. During the period June-August, 1944, the Eighth Air Force attributed 60 percent of their bomber losses and 98 percent of their bomber damage to ground fire. A total of 700 bombers were lost during this three-month period and 13,000 damaged.

In spite of this effectiveness of guns against manned bombers and the first operational cruise type missiles, the Army realized that more sophisticated and advanced weapons were necessary to meet the advancing threat. In 1945, the military characteristics for the first surface-to-air guided missile were written at Fort Bliss, Texas. In 1953 this weapon, the Nike Ajax, was placed on operational sites throughout the United States.

Our present continental air defense system of the United States was initiated in 1949, with action by both the Air Force and the Army coordinated only by mutual agreements. Not until 1954 were the efforts of all services with air defense capabilities combined into a single air defense system with the establishment of CONAD.

This has now been expanded to the North American Air Defense Command, established in September 1957. The two national air defense systems are now, in effect, combined into one with a single commander and a single mission: "Defend the Continental United States, Canada and Alaska against air attack."

The most spectacular parts of our command are the weapons—Nike Ajax and Nike Hercules.

The low altitude capability of air defense weapons has long been a point of concern—both within and outside the Army. Frankly speaking, it is one of our most difficult areas, although in current tests the low altitude capabilities of Nike missiles have been exceeding expectations. The Ajax has a limited low altitude capability, and while the

Hercules has been improved in this respect, we are not entirely satisfied, and we need a complementary weapon. Expected to be operational in the immediate future is the Hawk, designed primarily as a low altitude weapon.

Hawk, a deviation from the Nike family, lives up to its name—Homing All the Way Killer—by pouncing from above.

We still do not have a perfect weapon—a one shot, one kill weapon. That is the ideal, the goal we are seeking. The progress made by the transition of gun to missile has been tremendous. We are continuing all efforts toward eliminating the remaining human errors. However, we recognize that mass produced, relatively inexpensive missiles will always have a reliability somewhat less than 100 percent. While our manufacturers can and no doubt will improve missile reliability, to insist upon the flawless weapon would cause costs to soar prohibitively. We can, after all, fire the second missile at a target if necessary.

Early detection, maximum tracking capabilities, minimum computing time, and the ability to combat electronic countermeasures are some of the most critical problem areas. Though we may consider this area the most critical, we also believe it to be the area with the greatest potential.

Our missile units are able to detect, attack and destroy a target entirely by use of their own equipment. This action requires a constant alert by a large number of persons and would be resorted to only in the absence of early warning and control from a NORAD air division. All of our units are compatible with the overall air defense system of the United States, and our units engage targets under the rules of engagement as promulgated by NORAD. By this integrated control of fire we gain maximum use of all weapons, insure the safety of friendly air traffic, and do not interfere with military air operations essential to our national defense.

To further improve our self-sufficiency, and at the same time to make maximum use of early warning and control received from NORAD, we have devised Missile Master.

We have had one Missile Master operational in the Washington-Baltimore area since December 1957, with several more programmed. Each will assure essential control and the vitally important distribution of fire within our defenses, and will be compatible with the Air Force's Semi-Automatic Ground Environment (SAGE) System. when the latter is completely developed and installed.

We have today a weapons system requiring some 1,500,000 parts as opposed to that of the air defense weapons of World War II which had some 63,000 parts. In addition, our nuclear capability is increasing every month. As you may have presumed, the introduction of nuclear warheads in air defense has complicated the supply and maintenance problem.

The total construction dollars spent for Army air defense units from FY 53 through FY 59 will be $546,000,000. The 1960 FY construction requirements alone may approach this amount.

When we speak of costs, however, what comparison or justification can be used? No matter what criteria are used, today's defense is more effective than that of yesterday. Today it will take not more than two Ajax missiles to do what 400 to 800 rounds of 90mm could do in 1944. But we must face targets beyond the altitude capability of the 90mm and targets costing, in terms of dollars, ten to twenty times as much as the World War II bomber. And, these targets may be carrying destructive loads in terms of megatons of TNT. Justification of these costs can only be made by the fact that these units provide the most effective defense at the most economical price available.

Our operational and alert status, in combination with our austere organization, requires that our authorized strength be maintained at 100 percent. This 100 percent strength has been maintained, with the high proportion of technical specialists which we require.

Air Defense Tomorrow

LT. COL. RICHARD J. TITLEY

U. S. Army Air Defense Command

IN ORDER to understand the future role of the Army in air defense, we must examine the several facets of the problem that confronts us.

First let us address ourselves to the near future, i.e., five or six years hence. What threat faces us during this time?

There is the high speed jet bomber capable of launching air-to-surface missiles. Air-supported cruise missiles can also accompany the bombers.

Then there is the ballistic threat. The intercontinental ballistic missiles and shorter ranged ballistic missiles launched from submarines constitute this threat.

The speeds of modern bombers continue to increase and the use of air-to-surface missiles permits speeds possibly as high as Mach 3. It appears the number of bombers will diminish with time, as greater numbers of ICBM's enter the inventories. We must remember, however, that the total number of objects that confront us will tend to increase as each bomber may carry several decoys. The defenses must then either discriminate these decoys from the weapon carrier or engage all objects. The numbers of air-to-surface missiles should increase as potentially these are very effective offensive weapons.

Modern aircraft can carry megaton-size weapons and we can expect the size of these weapons to increase.

In the case of the ballistic missile threat, we see that speeds of these objects are at least ten times greater than any that we face from the airborne threat.

The number of ICBM's will increase in the future and we must expect at least hundreds of these missiles.

As the ICBM's are improved we can expect the problem to be compounded by the presence of decoys.

Both the size of warheads and the accuracies can be expected to improve with time.

The ballistic missiles launched from submarines present

a significant threat in the future. We can eventually expect hundreds of objects of this category with large warheads. There is every reason to expect excellent accuracies from these shorter range ballistic missiles.

What must we defend in the future? Today, as you know, we are defending population centers, industrial areas, and our retaliation forces. Gradually, our offensive retaliation power will be concentrated more and more with our IRBM's and ICBM's and less with manned bombers.

Our future ICBM sites will be underground and dispersed so as to require little active defense. Thus in the future we shall concentrate on the defense of our population, industry and key facilities.

Until recently, we have been inclined to refer to our population areas as city areas. New York City, Boston, and Washington have been treated as separate areas. One must realize that more and more these city areas have expanded and tomorrow many of these will amalgamate into one large urban region.

The area from Bangor, Maine, to Norfolk, Virginia, is continuous and likewise the Gulf and Southern regions are extensive areas. The strip from Jacksonville to Miami is changing from a playground to an industrial area.

It is upon these areas that we must converge our attention in the future. Fortunately the increasing range of the Army air defense weapons together with the Air Force air defense weapons permits an extension of our current concept of defense in depth.

Having established the fact that the future threat will place greater demands on our defensive system, we must examine our requirements to defend against this threat. The fundamental problem seems to be to determine how much of our effort and resources should be spent for this defensive mission as compared to the offensive mission. This is, indeed, a complex problem and one that is continuously being examined at highest national levels. We do not propose that most of our effort be expended for defense. A Maginot Line concept is not required. We do, however, require an adequate defensive posture that is in balance with our offensive capability. We are confident that an adequate defensive system can be supported to meet this growing threat within expected resources.

Such a defensive system must be carefully developed and selected. It must be developed within the minimum lead time to enable us to get the maximum usefulness from our systems in terms of time. This results of course, in a greater return for the dollar invested. The Army has such a program underway today.

An all-tltitude system is desired. This will permit a system that can engage all air-supported targets at all altitudes. We currently have under study improvements to our Hawk family that can greatly increase the range and can give to Hawk this all-altitude capability.

A higher rate of fire has always been desirable in artillery weapons and this will continue to be so for the artillery missiles systems of the future. This enables us to engage larger flights of objects in a shorter period of time.

Flexibility in warhead choice permits us to place a measured amount of force against the enemy. This allows us to conserve our nuclear material and more important, we can prevent damage to our own installations by our defensive warheads.

Reliability, of course, is always a requirement. We have excellent reliability in our Army systems of today and we are striving for even better reliability without excessive increases in costs in our system of tomorrow.

More and more we recognize the value of having a capability to redeploy our weapons from one area to another. All the Army's systems, present and future, designed to defeat the airborne threat, can be redeployed.

Fast response is mandatory. This enables us to rapidly react should warning time be short.

Automaticity is desirable in our systems. We believe that there is a proper balance between a desire for complete automaticity and the retention of simplicity and low cost. We therefore, strive for the optimum rather than the maximum in automaticity.

The Nike Zeus system under development by the Army is designed to meet the intercontinental ballistic missile threat and the threat from sub-launched ballistic missiles. The great wealth of information and experience that has been gained by the scientific-military-industrial team that developed Nike is being applied to great advantages in this program. In fact, this system concept has permitted us to utilize certain Nike Hercules components in the Zeus development and as a result many of the critical components of the Nike Zeus have already been developed and tested. These tests to date have been most successful.

In the period beyond the near future that we have examined, there can be no doubt that the air defense problem will become more complex as new offensive techniques are developed. Certainly in this time frame our attention will be focused more and more toward space. The threat

GEN. HART

COL. PRIEST

COL. TITLEY

to the North American continent will continue to expand if space is utilized for military purposes. The growth potential of Nike Zeus will permit its use against space objects.

The techniques involved to defeat threats from space will be extensions of those we understand so well, i.e., extensions of artillery techniques; engaging moving objects from stationary locations is the kind of problem that the Army has solved and will continue to solve.

Conclusion:

STRATEGIC ASPECTS . . . . . *General Hart*

WE BELIEVE that the proper accouterments of a warrior should include both the sword and the shield. Nothing would please us more than to know that neither would ever have to be used.

The deterrent value of offensive forces is well chronicled. Air defense can serve the same purpose, since deterrence may be based both upon an aggressor's fear of retaliation and upon doubt that his attack would succeed. But there is no deterrence if the enemy can—or believes he can—penetrate defenses and neutralize retaliatory forces or otherwise cripple us. Therefore, adequate defense of strategic retaliatory forces is a matter of absolute necessity, if they are to serve their purpose. Also, it would be a hollow victory if our forces survive while our population, industry and institutions are destroyed. It would be small comfort to know that the enemy, too, lay prostrate. We, therefore, contemplate equitable air defense of these key elements of national power. This posture is deemed essential for hot or cold wars; large or small. We strive to see that the strength of our defensive forces, together with the strength of our offensive forces will mean just one thing to the enemy—simply that military aggression against the free world will fail.

Naturally, in the era of the IRBM and ICBM our deterrent team will change in composition and in capability. However, its purpose—until we find a better road to peace—will be the same, and its primary characteristics will be vigilance and flexibility attuned to the needs of the hour.

Based upon this philosophy of air defense and its contribution to the policy of deterrence, the principal objectives of the North American Air Defense Command are: first, to contribute to a balanced deterrence; and second—if deterrence fails—to protect the United States and Canada from devastation so that we can retaliate effectively, and so that our people, our economy, and our institutions may survive.

These air defense objectives are logically in consonance with our national objectives, with our philosophy of war, and with the pertinent combat lessons of World War II. The question is often asked by the uninformed: "Why is the Army in the air defense role?"

An adequate and effective defense, whether provided in whole or in part by the Army, or in whole or in part by another service, will cost approximately the same in terms of money, materials and manpower. The issue, then, is who can make the most *timely* and *effective* contributions to this defense. The Army is in the system because it has proved that its contributions are timely and effective, and are essential to an adequate air defense. I am confident in our ability to continue this essential contribution for many years to come.

I also would like to emphasize that there is no conflict between the concept of air defense as held by the Army and that held by the North American Air Defense Commander or by any other service. We all agree that we need a combination of weapons that will provide depth, flexibility and a growth potential to meet the ever expanding threat. This requires, now and in the future, local defenses within area defenses.

Long experience of over forty years in the field has given the Army a most impressive capability in missiles, rockets, propulsion, warheads and guidance which, by its continued growth and development, will continue to make an effective contribution to the air defense system of our country.

In spite of the glamour of the new weapons, we cannot forget the basic essentials to the effective implementation of any system. These are personnel, communications, supply, maintenance, and normal administrative support. Our organization and our requirements can be and have been, closely related to the long standing organization of Army forces stationed within the continental United States, represented by CONARC and the technical and administrative services. The use of this strong base for logistical and administrative support has made possible a most economical contribution to the overall air defense system. We cannot afford to establish duplicating means of accomplishing all or parts of a mission when such means are within the capabilities of existing organizations.

By virtue of these attributes just discussed the Army today has operational in some 22 important localities effective local defenses at the most economical price available. These defenses are part of the command comprising all services and Canada and combined into one North American Air Defense team under one commander to do one job—defend the continental United States, Canada and Alaska against air attack.

Under the current concepts of the air defense of the continental United States, the Army is charged with the local defenses, as differentiated from the area defenses. Again the uninformed often claim a conflict between these two concepts, obviously in error. Applying to air defense the battle-proved concept of a defense in depth we find that local defense fits perfectly into area defense. Pushing out as far as possible the distance at which an attacker can be engaged, with the engagement becoming more and more intense as the vulnerable areas are approached, is the basis of any effective defense. The local defenses use the same air raid warning system and fit into the same air space control program as do the area defenses. The defense in depth concept is the basis and justification for the existence of the local defense. The forward elements of the area defense, by harassment and attrition, wear down the effectiveness and the capability of the attacker. Early disclosure of electronic countermeasures and decoy activities, by the forward elements of the area defenses, makes the local defenses even more effective in their countermeasures against those of the attacker that may get to the local defenses.

AUSA'S 1958 RESOLUTIONS

No. 1. ARMY ORDNANCE MISSILE COMMAND

WHEREAS, The Army Ordnance Missile Command, through its activities at Redstone Arsenal, Alabama, at the Jet Propulsion Laboratory at Pasadena, California, and elsewhere, has consistently been the leader in the development of the Nation's missile and space capabilities; and

WHEREAS, A tremendous team spirit, efficiency, and esprit de corps has developed within the scientific and technical teams of the Army Ordnance Missile Command; and

WHEREAS, To dissipate these teams may destroy a proven major foundation of the Nation's capabilities for developing missiles and space activities in support of national defense of the United States, whether military or civilian;

NOW, THEREFORE, BE IT RESOLVED, That in the national interest the Association of the United States Army respectfully urges the President of the United States to continue to maintain the present general organization of the Army Ordnance Missile Command to insure the maximum utilization of the unique capabilities of this outstanding team, both in advancing the space capabilities of the Nation and in developing essential military missiles.

No. 2. THE ARMY'S MISSIONS

WHEREAS, The march of world events leads to the conclusion that future Communist efforts toward territorial expansion and increased area of influence will continue; and

WHEREAS, The Sino-Soviet Bloc is principally a land power and its principal avenue of military expansion is overland; and

WHEREAS, The U. S. Army is the primary land fighting force within the United States defense establishment; and

WHEREAS, The Army has world-wide commitments which require the utilization of a large part of its resources and, in addition, has responsibilities for the maintenance of an effective strategic army striking force, of air defense and of regular and reserve Army forces; and

WHEREAS, These commitments, together with limitations on the total strength of the Army, have reduced to an alarmingly low point the number of Army units making up the strategic Army force which must be ready for action any time and any place; and

WHEREAS, Any further reduction in the strength of the Army or in the Reserves or National Guard will seriously jeopardize the security of the Nation in the event of a limited or general war;

NOW, THEREFORE, BE IT RESOLVED, That the vital missions assigned to the United States Army in defense of the United States and its interests within the Free World, including the capability of the United States Army to wage sustained combat on the ground, require at this time an increase in the fighting power of the Active Army, the Army Reserve and the Army National Guard.

No. 3. MAINTENANCE OF A STRONG ARMY

WHEREAS, The defense of the United States is dependent on the active Army and the citizen soldier of the United States Army Reserve and the Army National Guard; and

WHEREAS, There is active and continuous threat of Communist aggression against the Free World; and

WHEREAS, The Treaty obligations of the United States in support of friendly nations of the Free World require a strong, vital, active army integrated with fully capable United States Army Reserve and Army National Guard units;

NOW, THEREFORE, BE IT RESOLVED, That the Association of the United States Army, as one of its primary goals, continue to advocate an active army of not less than 1,000,000 and advocate a paid drill strength of not less than 300,000 in the U. S. Army Reserve, and not less than 400,000 in the Army National Guard, both exclusive of all 6-month trainees.

No. 4. MODERNIZATION

WHEREAS, The land forces of the Sino-Soviet bloc greatly outnumber the forces of the United States and its allies; and

WHEREAS, A high percentage of the weapons and equipment currently available to and utilized by the U. S. Army was produced during World War II and the Korean War; and

WHEREAS, The USSR, since the close of World War II, has extensively modernized its land forces with weapons and equipment of new design, and has emphasized in the modernization process mechanization

of its forces, electronics, and firepower of increased range, lethality, and mobility; and

WHEREAS, The USSR is producing modern ground equipment at a rate alarmingly greater than that of the United States, thereby permitting the USSR to equip not only its own forces but also those of its satellites and allies; and

WHEREAS, A continuation of the currently unsatisfactory rate of modernization of the U. S. Army would seriously impair the capability of the United States to counter Communist aggression, whether limited or general in nature;

NOW, THEREFORE, BE IT RESOLVED, That the U. S. Army should be modernized at a rate and to an extent which will assure the United States qualitative superiority in all weapons and equipment.

No. 5. AIR LIFT

WHEREAS, The Strategic Army Corps has a unique capability to deal with the challenge of limited war by bringing to bear its trained manpower and graduated firepower; and

WHEREAS, Promptness of reaction is a primary requirement for coping with limited war; and

WHEREAS, Prompt action by the Strategic Army Corps is inhibited by the lack of strategic airlift to transport Army combat elements from the United States to an area of threat or action with sufficient rapidity and to support such a force by air until surface transportation can take over the task of supply; and

WHEREAS, This dearth of adequate airlift is crippling to the Nation's ability to respond quickly and forcefully to a threatened or actual limited war situation; and

WHEREAS, The agency now charged with the responsibility of providing an adequate air lift has not so done;

NOW, THEREFORE, BE IT RESOLVED, That the U. S. Army must be equipped with sufficient transport aircraft on top priority to permit the movement of at least one-half of the Strategic Army Corps.

No. 6. WEIGHT AND RANGE RESTRICTIONS ON ARMY AIRCRAFT

WHEREAS, Weight and range limitations on Army aircraft continue to deny to the Army the full fruits of technological advances; and

WHEREAS, These limitations continue to deny to the Nation the developments which the Army could contribute in aircraft development; and

WHEREAS, These arbitrary limitations continue to apply only to the Army; and

WHEREAS, No service should be denied the equipment it needs to further the accomplishments of its mission; and

WHEREAS, The depth of the battlefield in modern warfare is such that present weight and range limitations on aircraft prevent the Army from attaining its full effectiveness;

NOW, THEREFORE, BE IT RESOLVED, That the limitation barriers on aircraft use, development, and procurement be eliminated, in order that army commanders in combat may have the full advantage of the capabilities of modern aircraft for the accomplishment of their missions.

No. 7. ARMY AIR DEFENSE CAPABILITIES

WHEREAS, An adequate air defense against enemy air and missile attack against the Continental United States and U. S. forces overseas is vital to National Security; and

WHEREAS, The Army has demonstrated a capability for developing effective air defense systems at minimum cost and has in advanced development an anti-missile missile; and

WHEREAS, Today U. S. Army air defense missiles are the most effective available ground-based air defense means and are now guarding vital centers in the United States and overseas; and

WHEREAS, The conduct of air defense using missiles launched from the ground has logically and traditionally been entrusted to the United States Army;

NOW, THEREFORE, BE IT RESOLVED, That the Army be charged with the responsibility of land-based surface-to-air defense and that full utilization be made of the Army's capability in the establishment of North American and overseas land-based surface-to-air defense systems.

No. 8. CAREER INCENTIVES

WHEREAS, National Security in the atomic age demands a higher degree of leadership and technical skill than ever before; and

WHEREAS, The competition for leaders and skilled technicians is at an all-time high; and

WHEREAS, The turn-over in personnel within the services is costly in dollars and in efficiency of our fighting forces; and

WHEREAS, Those provisions of the Cordiner Report pertaining to pay of active duty personnel have become law; and

WHEREAS, The attractiveness of a service career and the efficiency of military personnel are dependent not upon pay alone but also upon adequate provision for the welfare of military personnel and their families throughout active service, and the prospect of adequate retirement pay at the conclusion of an active career; and

WHEREAS, Basic and traditional benefits have been curtailed or have failed to improve in consonance with the times and consequently have lost value as career incentives;

NOW, THEREFORE, BE IT RESOLVED, That the Association of the United States Army urge the prompt

passage of legislation and supporting appropriations to implement those Career Incentive recommendations of the Cordiner Report that have not yet been acted upon;

BE IT FURTHER RESOLVED, That action should be taken to implement the following Career Incentives:

Troop and family housing
Medical and dental care of dependents
High standards of service at reasonable cost in commissaries, laundries and post exchanges
Adequate retirement pay
Concurrent travel of heads of families and their dependents to overseas stations;

BE IT FURTHER RESOLVED, That a copy of this resolution be furnished the members of Congress of the United States, the Secretary of Defense, and Secretary of the Army.

No. 9. UNITED STATES MILITARY ACADEMY

WHEREAS, Training in leadership and the preparation for command within the United States Army is the primary function and purpose of the United States Military Academy; and

WHEREAS, The quality of the graduate of the United States Military Academy will reflect itself in the quality of the United States Army as a whole; and

WHEREAS, The quality of the United States Military Academy's output, the officer graduate, is directly proportional to the quality of input, the appointed cadets; and

WHEREAS, All qualified young men are eligible for appointment to the United States Military Academy;

NOW, THEREFORE, BE IT RESOLVED, That the Association of the United States Army develop a program for encouraging the outstanding youth of the Nation to seek appointment to the United States Military Academy and for assisting said youth in obtaining appointments, so that the United States Military Academy will be filled to capacity with cadets having the best potential for becoming leaders in the Army.

No. 10. COMMENDATION OF THE ADVISORY COMMITTEE ON PROFESSIONAL AND TECHNICAL COMPENSATIONS

WHEREAS, A modernized system of compensation in the Armed Forces was adopted during the past year by the Congress and approved by the President of the United States; and

WHEREAS, This system by improving the personal well-being of the members of the Army Forces and their dependents has raised the morale and distinctly increased the military efficiency of the Armed Forces of the United States; and

WHEREAS, This modern system of compensation was developed and adopted through the untiring efforts and resourcefulness of Mr. Ralph J. Cordiner, Chairman, and members of the Advisory Committee on Professional and Technical Compensations;

NOW, THEREFORE, BE IT RESOLVED, That the Association of the United States Army in conference assembled on the 22nd day of October 1958, formally expresses its thanks to the Committee and particularly to Mr. Ralph J. Cordiner for his untiring efforts, his brilliant and inspiring leadership of the Advisory Committee on Professional and Technical Compensations and for his great service to the United States.

No. 11. REGIONAL MEETINGS

WHEREAS, The national strength of the Association of the United States Army is derived in large part from the strength of its chapters; and

WHEREAS, Many segments of the public at local and regional levels need more information on the activities and programs of the Association of the United States Army; and

WHEREAS, There exists a continuing need to broaden the base of public understanding of the United States Army; and

WHEREAS, Community relations efforts are an important element in obtaining support of public opinion for the aims and purposes of the Association of the United States Army; and

WHEREAS, Voluntary regional meetings organized and conducted by groups of chapters would promote greater public understanding of Association of the United States Army programs;

NOW, THEREFORE, BE IT RESOLVED, That the Association of the United States Army approve organized voluntary regional meetings of Chapters of the Association of the United States Army;

BE IT FURTHER RESOLVED, That National Headquarters of Association of the United States Army support and encourage regional meetings to the extent of aiding in acquiring speakers of stature and providing advice as to obtaining exhibits, troop support, and other technical assistance as needed and feasible.

No. 12. VOTE OF THANKS

WHEREAS, The Officers, members of the Council of Trustees, and members of the Advisory Board of Directors of the Association of the United States Army have given freely of their time and devoted great effort to the attainment of the objectives of the Association; and

WHEREAS, The Association of the United States Army, the national defense effort, and our beloved country have benefited greatly from such effort freely given;

NOW, THEREFORE, BE IT RESOLVED, That the membership of the Association, assembled in Annual Meeting in Washington, D. C., October 22, 1958, give a rising vote of thanks to the Officers, members of the Council of Trustees, and members of the Advisory Board of Directors.

The President's Report

1. PREAMBLE

Because of the steady progress which has been made since the last Annual Meeting it is a pleasure for me to report to you the status of your Association at this time. This progress is no mushroom growth. Its roots are deep, the growth is solid, and the conditions for future growth are favorable.

Our attitudes and actions have gained the respect of the news media, of industry, of Pentagon planners and of the thinking public. Your efforts and cooperation have made this possible. Your further support is necessary for continuous growth.

2. ANNUAL MEETING

First a word about our Annual Meeting. It has become one of the major military affairs in our country. Those who attended the first Annual Meeting in October of 1955 at Fort Benning, Georgia, can recognize clearly the tremendous progress which has been made with our Annual Meeting program.

At our first Meeting some 600 people attended. At our 1956 Annual Meeting the attendance doubled, and a little more than 1,200 people registered for that Meeting. Last year the number of registered attendees had risen to almost 2,000, and this year we have 2,700.

3. MEMBERSHIP

Since the Association was reorganized in October of 1956, the membership in the Association has grown from approximately 36,000 to approximately 57,000 as of today. Considering the number of officers and men in the active Army, the Reserve, and the National Guard, and the vast civilian alumni of the Army, I do not feel that our membership growth has kept pace with the other activities of the Association, nor do I feel that the present membership provides our Association with the financial and moral support that it should have if it is to effectively carry out our aims and objectives. Accordingly, during my term as President, I am going to make an all-out effort to increase materially the membership in our Association.

We can obtain support for the Association without using pressure on the prospective members if the prospective members understand what the Association is, and what it is trying to do. During the coming year I am asking each member of the Association to take it upon himself to acquaint as many of his associates as possible with the Association, its aims and objectives, and the activities in which it is engaged. With your full cooperation I firmly believe that we could double the membership in a very short space of time.

The annual dues in the Association have not been increased since 1950. While an increase in dues was considered by the Council of Trustees, we agreed unanimously that it would be preferable to offset the need for increasing the dues by making a greater effort to increase the membership in the Association.

4. MEMBERSHIP FULFILLMENT

Early this summer we installed the last of our IBM equipment and our membership fulfillment department is now fully mechanized. Membership applications are now processed faster, more accurately and more economically than ever before. The processing of a typical application—from receipt at national headquarters until the membership card is in the mail—took over three weeks in early 1957. This same processing is now completed within seventy-two hours —quite an improvement.

5. SUSTAINING MEMBERSHIP PROGRAM

At the time the Association was reorganized in October of 1956, the establishment of a sustaining or industrial membership program was initiated. The sole purpose of this program was to improve communication between Industry and the Department of Army and to provide materials and services which would enable industry to do a better job in support of various Army programs.

So far in our program, the Association has sponsored four symposiums. Two additional symposiums are programmed for 1959: One on Guided Missiles, at Fort Bliss probably in February; and one on Mobility at Fort Bragg in April. In each of these classified symposiums, approximately 350 top representatives of industry and key Army leaders have gathered together to discuss plans, programs, and problems in these various fields. . . . During

Association's Progress. Maj. Gen. A. J. Drexel Biddle, President of AUSA, flanked by other officers and members of the Council of Trustees, delivers his report during the annual business meeting.

the past year we have established a monthly newsletter for our Sustaining Members and have added a motion picture film service.

At the present time, we have 50 major corporations as Sustaining Members.

6. REGIONAL PROGRAM

Our regional program has been growing along with the Association. Last year our President reported 69 Chapters and 32 AUSA ROTC Companies. Today we have 91 Chapters and 46 Companies. Even this net gain does not tell the whole story; there have been mergers of several Chapters, notably in the New York City area.

What have the Chapters been doing? Just as in any other group, we have Chapters that are effective and those that are not. Much of the work the Chapters do does not show on the surface, but some of it does. At the risk of seeming favoritism, and knowing full well the dangers of omission, I would like to single out the following Chapters for effective educational activities implementing AUSA objectives: Pikes Peak, Columbus-Phenix City-Fort Benning, Henry Leavenworth, Washington State Number One, Southeastern Alabama, Fort Riley-Central Kansas, Central Texas-Fort Hood, and New Orleans. For excellence in community relations, in addition to some of the Chapters mentioned above, I would like to mention Fort Leonard Wood, Monterey County, William Penn, East Bay, Hawaii, Antilles, Greater Los Angeles, Newton D. Baker, George Washington, and Polk. Certain other Chapters, including New York, Kentuckiana, Braxton Bragg, Northern Delaware, Alamo, Northeast Florida and Columbia River, have performed other valuable services.

In addition to the ones I have mentioned, your National Headquarters is certain that other Chapters have contributed to our over-all aims, but they have not been as effective in *reporting* as they have been in *doing*.

Among our ROTC Companies, we have the same distribution of effectives and non-effectives—again, our ratings are based on what they report. I would like to mention Pennsylvania State University for sustained enthusiasm, New York University Heights Company for the best program of service to the University and its Military Department, and the following for general interest and effectiveness: John Carroll University (Cleveland), Sooner Company (University of Oklahoma), Loyola of Chicago, Farris-Ware Company (Prairie View A&M, Texas), Edmund R. Walker Company (University of Connecticut), and Idaho State College Company.

Alaska's Color. Jack R. Anderson (right), a delegate and representative of the Governor of Alaska, presents our new state's color to General Biddle.

Effective Action. MSgt Frederick L. Shawhan of Kentuckiana Chapter receives the Certificate of Appreciation for "enthusiastic and effective actions to acquaint members of the Army with AUSA's objectives."

We now have at least one Chapter in every state except Maine, New Hampshire, Vermont, Rhode Island, Connecticut, West Virginia, South Carolina, Tennessee, Mississippi, Wyoming, Nevada, Utah, Montana and Idaho.

We are engaged in a survey to learn the facts about the effectiveness of our regional units in order that we may help those that are not performing as expected. Our regional program is expensive in money and in executive time; we want our dollars and our man-hours to bring results in attainment of Association objectives.

We should, at this point, make mention of the officers of the local Chapters, particularly the secretaries and treasurers, who give so freely of their time and of their efforts. Your Association is most appreciative of the thousands of unpaid hours that devoted local officers and members have spent on Association affairs. We know, too, that thousands

Business Meeting. Some of the delegates at large and from Chapters at the business meeting.

of dollars have been spent from local sources on Association affairs. This effort and this money have been expended unselfishly, and in most cases, have been rewarded only by a feeling of performing a service for National Defense. All of us in the Association may well be grateful.

7. MAGAZINE

The adoption of a set of objectives at the 1957 Annual Meeting provided the editorial staff of our magazine, ARMY, with goals to publicize and support during the current year. This it has endeavored to do, not quantitatively, but selectively, emphasizing those objectives that were most important and timely.

A good example of this was the magazine's treatment of the proposed reorganization of the Department of Defense. We published the President's lengthy state paper on this subject and also carefully analyzed the supporting proposed legislation. We pointed out wherein the legislation was in accord with the objectives of the Association and where it was not. We editorially supported the over-all objectives of the reorganization plan but we did not support those features of the plan that would have lowered the status and identity of the separate services. It is of interest to note that the bill finally passed by the Congress and approved by the Chief Executive was in substantial agreement with the views of the Association.

We have continued to publish a magazine that would attract the interest of both the professional military reader and the civilian interested in furthering the interests of the U. S. Army. This requires a mixed fare of subject matter that cannot be precisely measured into a tight and rigid formula. We attempt to keep flexible in order to meet the demands of rapidly changing events.

8. ADVERTISING

Paid advertising in ARMY magazine continues to be an important source of income for Association operations. I am sure that all of you have noticed its continuing growth. We have more than doubled the number of pages of advertising in the magazine over the past four years. In terms of gross advertising revenue, we have increased from approximately $50,000 in 1955 to almost $140,000 in 1958.

While advertising has contributed materially to the increase in size of our magazine, it has not reduced the editorial content. As advertising has increased, we have increased the total number of pages in the magazine, so that we are not sacrificing professional material just to accommodate the additional pages of advertising we are receiving.

9. AWARDS PROGRAM

Our awards program has been reexamined several times since our last Annual Meeting.

Formerly our ROTC medals were issued on a rather loose basis which resulted in the medals being awarded largely to seniors, and on local criteria. Since the medals may not be worn with Army uniform, a senior could wear the medal only a few times, and then place it among his souvenirs when commissioned. During the 1957-58 school year we offered medals to both juniors and seniors, so that no class would graduate without the opportunity to win a medal. During the current school year, our criteria require that only juniors are eligible, so the winner may wear it for a full school year. The criteria place emphasis on scholarship and leadership.

In addition to the medal, we offer a medal certificate which is suitable for framing. The certificates, which were suggested at our last Annual Meeting, have been well received. In the 1957-58 school year, we issued 391 medals.

Our other awards include Certificates of Achievement and Certificates of Appreciation. The Certificate of Achievement has been awarded only once—to Dr. Pickering for his part in launching America's first successful satellite. Twenty-two Certificates of Appreciation have been awarded.

10. BOOK SERVICE

We have continued the deemphasis on the Book Service mentioned in last year's report. . . . We still will order for members any book published in the United States; we still carry a small stock of the more readily salable titles.

In this connection, Association plaques, lapel buttons, brief cases, and miniature U. S. and Army flag sets continue to be in demand. We have arranged to make available Zippo lighters with the Association seal, on a trial basis. We are not trying to commercialize this emblem service, but merely attempting to make available these AUSA-identifying items for those who desire them.

11. FINANCIAL STATUS

1958 has been a year of definite financial progress. All of our major sources of income—advertising, individual memberships, and sustaining memberships—have established new record highs and all indications point toward continued improvement. Last year's annual meeting was a financial success and we fully expect this year's meeting to be even more successful. While our operating costs have continued to rise in line with the general economic situation, careful budgeting and constant review of our financial condition and progress have made it possible for us to continue to expand programs to a limited degree in support of our aims and objectives.

Perhaps our financial story can better be told by a few figures: For the six months ended 30 June 1958, our gross income was $250,881.39, costs and expenses were $244,488.14, leaving $6,393.25 to be added to our surplus. However at least half of this amount was required to meet increased costs over our budget estimate for the remodeling of one of our buildings to house our new IBM equipment. At the close of business on 30 June, our net worth stood at $117,661.62.

12. ATTENDANCE AT OTHER MEETINGS

Since our last Annual Meeting, invited representatives of the Association attended a large number of meetings of associations and groups interested in various aspects of national defense.

13. STATUS OF 1957 RESOLUTIONS

At the last Annual Meeting of the Association, ten resolutions were passed by the membership. These were translated into objectives for the Association during the past year. I should like to comment upon and review their present status. In order to refresh your memory, here is the substance of them.

Outstanding Leadership. Lt. Col. Jasper D. Ackerman was awarded a Certificate of Appreciation for "outstanding leadership of Pikes Peak Chapter," AUSA's largest and most effective. In his absence Capt. Frank Romano accepts it for him.

Advice and Assistance. General Biddle presents AUSA's Certificate of Appreciation to MSgt Joseph H. Barget, "for advising and assisting in matters relating to enlisted participants."

1. An active Army of one million men as advocated by the Secretary of the Army and the Chief of Staff before a Subcommittee of the Committee on Appropriations of the House of Representatives on 5 February 1957.
2. A four-division, full strength highly mobile striking force within the Strategic Reserve.
3. Procurement of sufficient long-range airlift to move immediately and to support thereafter two divisions of this striking force under a guaranteed priority for Army use.
4. Recognition of the vital importance of the Army National Guard and Army Reserve in the structure of our National defense.
5. Establishment of provisions to protect active and reserve personnel against arbitrary force-out and other breaking of faith with their unwritten service contracts subject only to faithful and competent service.
6. Upward revision of the weight and range limitations on Army aircraft and missiles.
7. Fuller use of the Army's proven capabilities in Air Defense.
8. Passage of proposed legislation implementing the recommendations in the Cordiner Report.
9. Maintenance of the separate identity of the services and insurance that all shall have parity of expression of their views in the highest executive and legislative councils of the Federal Government.

The tenth one places the Association in opposition to attacks against the Armed Services Exchange system and asks that the Association request Congress to take whatever measures are necessary to insure the maintenance of an exchange system which will provide essential merchandise and services for the service man and his dependents.

Obviously, some of the objectives are long-range and could not possibly be accomplished in one year. However, there are several of them in which definite progress has been made.

The organization of a four-division, full strength, highly mobile striking force within the Strategic Reserve has been accomplished to a degree with the establishment of STRAC. The provisions calling for the full-strength of these four divisions and the higher degree of mobility and the supplying of essential modern weapons still must be met and should receive continuing effort.

Some of the essential provisions of the Cordiner Report have now become law. Your Association is proud of the part it played in supporting the passage of this legislation. There are certain other recommendations in the Cordiner Report which must receive continued support.

The legislation passed in connection with the reorganization of the Department of Defense was closely related to our Resolution No. 9. I am happy to say that the legislation which was passed was almost completely in accord with the position which your Association established.

As a result of the fine work done by some of our chapters, particularly the Southeast Alabama Chapter, effective representations were made to the Congress regarding attacks on our Armed Services Exchange system, and while we must be continuously on guard, we feel that the spirit of this resolution is being accomplished. (May I digress a moment to commend the action taken by the Southeast Alabama Chapter in obtaining testimonials from local businessmen near the Army Aviation Center at Fort Rucker supporting adequate Exchange service and pointing up the necessity of it. Since much of the criticism of the Armed Forces Exchange Service has come from local businesses, this was a most effective rebuttal and assisted materially.)

Now I will discuss for a moment those objectives which have not been achieved as yet. Our first resolution supporting an active Army of one million men has certainly not been accomplished nor has it been actively supported outside of our Association. However, through all of our efforts to support this resolution by editorials, press releases, fact sheets, other publicity, and actions of the Chapters, we have seen a marked improvement in the understanding of the need for a strong Army in support of our National defense. We have been heartened particularly by the stand taken by numerous Congressmen and Senators deploring the continuing cuts in the Army's strength. The action of the Armed Forces and Appropriations Committees of both Houses of Congress indicated their desire to halt the constant reductions in the Army. The Secretary of the Army and the Chief of Staff both indicated that a strength of 925,000 is a necessity. So our efforts have not brought complete success but they have brought about some change in thinking which augurs well for the future.

There is a growing recognition by all concerned of the inadequacy of strategic airlift because of the efforts we have made to support our Resolution No. 3. This is a long-range objective.

In accord with our fourth Resolution, the Association reacted against the effort to reduce the National Guard and the Reserve. The Association will continue its efforts to support the important contribution of the National Guard and the Reserve to our National defense.

The Association is maintaining close contact with the Department of Army on problems relating to reduction in force. We will continue our efforts to assure the establishment of measures which will provide greater protection and stabilization of active and reserve personnel subject only to faithful and competent service.

The Association's stand with respect to the weight and range limitations which have been placed on the use of missiles and aircraft by the Army is becoming well known.

Finally we have the resolution dealing with the full use of the Army's proven capabilities in air defense. Our most recent effort in this connection was your Association's rebuttal in full to the unwarranted and unfair attacks which were made on the Army's Hercules.

There is only a certain amount of support for these resolutions which can be accomplished in our National Headquarters. Certainly, it is our responsibility to provide back-up material and guidance for the support effort in connection with the resolutions. No matter how good this material may be, and personally I think most of it is excellent, it cannot help us to accomplish the mission unless it is brought to the attention of the public at the grass roots level, to the notice of opinion-molding groups, and to the consideration of our lawmakers. Our chapters and the Association's individual members must help to disseminate this information. We have had numerous instances where we have been able to obtain support from local civic groups, newspaper and other important media when this factual material was brought to their attention. Each of us should make an effort to assist in the accomplishment of the objectives [of the Association]. I hope that our chapters particularly will make a special effort during the coming year to utilize the material which we send to them.

MINUTES OF 1958 ANNUAL MEETING

1. The 1958 Annual Meeting of the Association of the United States Army was held on 22 October 1958, in Sheraton Hall, Sheraton Park Hotel, Washington, D. C.

2. The meeting was called to order by the President at 1330 hours.

3. The President announced the reelection of Colonel Willard F. Rockwell as Chairman of the Council of Trustees, and introduced Colonel Rockwell to the audience. The President then introduced other members of the Council of Trustees on the platform.

4. The President then announced that congratulatory messages additional to those announced at the opening sessions had been received from many sources and listed the senders of these messages.

5. The next order of business was presentation of Certificates of Appreciation to Master Sergeant Frederick L. Shawhan, Master Sergeant Joseph H. Barget, and to Lieutenant Colonel J. D. Ackerman. Colonel Ackerman's award was accepted by Captain Frank Romano in Colonel Ackerman's absence.

6. The president introduced Mr. Jack Anderson, who presented the flag of Alaska to the Association on behalf of Waino E. Hendrickson, Acting Governor of Alaska, with appropriate remarks.

7. The President then read his report, a copy of which is attached as a part of these minutes.

8. The president introduced the Chairman of the Resolutions Committee, Colonel William H. Baumer. Colonel Baumer made the report of the Resolutions Committee, stating that all suggestions received had been carefully considered; complimented the members of the Committee for their hard and intelligent work, and stated that the resolutions had been shown to the Council of Trustees. He said further that the Council of Trustees had taken no formal action on the resolutions but had made helpful suggestions for changes in wording on two resolutions.

9. The President announced the ground rules for voting and then asked the Chairman of the Resolutions Committee to read the first resolution. (All resolutions are appended to these minutes and made a part of them.) This resolution was seconded by Mr. Boyd Allen, Southern Arizona Chapter. A vote was called for; there were no dissenting votes. The President announced that the resolution was carried. Mr. Geffs, delegate from the Greater Los Angeles Chapter, protested that there had been no opportunity for discussion. The Chair apologized for the procedural error and invited Mr. Geffs to make comments. Mr. Geffs indicated he felt the resolution was weak and asked if the resolution submitted by the Greater Los Angeles Chapter had been considered. Colonel Baumer answered in the affirmative. Mr. Geffs requested amendments. The Chairman announced that a written vote would be taken. Mr. Harry Colmery, Topeka Chapter, rose to a point of order, pointing out that under the rules no amendments could be made from the floor. The result of the written vote was: Yes, 422; No, 0; abstaining—not voting or not present—174.

Resolutions No. 2 through 12 as submitted by the Resolutions Committee were approved by the delegates, voting on voice votes without dissent.

Colonel Baumer read Resolution No. 13 which referred to the speech made by General Twining, and moved its adoption. Mr. Greene, Westchester County Chapter, and Colonel Gillespie, Newton D. Baker Chapter, seconded the motion. General Sverdrup, a member of the Resolutions Committee, spoke in opposition, as did Colonel Bell, Headquarters Seventh U. S. Army Chapter. Others speaking against it were Mr. Geffs and Mr. Wilde, San Bernardino County Chapter. Mr. Creighton, Wolters Chapter, moved to table the resolution. This motion was seconded by Mr. Bigham, Central Texas-Fort Hood Chapter, and by General Paxson, Santa Barbara-Ventura County Chapter. At this point Colonel Baumer withdrew the original motion and Mr. Greene withdrew his second.

10. Mr. Allen moved that the Annual Meeting Committee consider seriously the scheduling of more time for the Chapter delegates. Captain Eppley, delegate-at-large, U. S. Army Europe, seconded the motion. The motion was carried unanimously.

11. Sergeant Posthuma, Alaska Southern Chapter, brought up the question of ratification of the resolutions by the Council of Trustees. After much discussion, Sergeant Posthuma moved that once the delegates have voted on a resolution and passed it, that it should stand as passed without further action by the Council of Trustees. Mr. Ashworth, Columbus-Phenix City-Fort Benning Chapter, seconded the motion. There was considerable discussion and some parliamentary confusion. The question was discussed by members of the Council of Trustees as well as by delegates on the floor.

Individual Council members stated that the Council of Trustees would consider the method of handling resolutions in light of the will of the delegates as expressed on the floor.*

Mr. Bigham suggested an amendment to Article X that would require a two-thirds vote of the majority of the delegates present at the Annual Meeting to amend the by-laws. At this point General Sutton, delegate-at-large, Fourth Army Area, moved to adjourn, which motion was seconded by General Sverdrup.

Colonel Bell asked for permission to make a statement about the efficient way in which the Sheraton management had been handling the quick changes necessary in Sheraton Hall, and asked for an expression of appreciation for the hotel's management. Applause greeted this statement.

A vote was taken on the motion to adjourn, which was carried. The meeting was adjourned at 1615 hours.

*The Council of Trustees approved the resolutions without discussion immediately after the adjournment of the Annual Business meeting and before the delegates had left the floor.

AUSA's Resolutions Committee. Clockwise around the table: Brig. Gen. Harrison Shaler, USA-rtd., Sixth Army; Mr. Maynard R. Ashworth, Columbus-Phenix City-Fort Benning Chapter; Maj. Gen. L. J. Sverdrup, USAR-rtd., Fifth Army; Col. Ducat McEntee, USA-rtd., Kentuckiana Chapter; Col. William H. Baumer, USAR, First Army, *Chairman;* Lt. Col. W. D. McClellan, Second Army; Lt. Col. C. C. Helena, Henry Leavenworth Chapter; Brig. Gen. W. J. Sutton, USAR, Fourth Army. Mr. Park Hunts, from Third Army, was not present when this picture was made.

THE MONTH'S BOOKS

Monty's Memoirs

THE MEMOIRS OF FIELD MARSHAL MONTGOMERY
World Publishing Company, 1958
508 Pages; Illustrated; Maps; Index; $6.00

Reviewed by
DR. FORREST C. POGUE, *author of the U. S. Army's official* The Supreme Command, *who is Director of the Research Center, George C. Marshall Research Foundation.*

Strong belief in his essential rightness, in the efficacy of his plans, and in the excellence of his methods of command mark the pages of Field Marshal Montgomery's memoirs as they did his views and actions during a military career of fifty years. His certainty has a touch of religious fervor, perhaps inspired by his father, one-time Bishop of Tasmania, whom he worshiped. His strong and stubborn character obviously came from his mother, with whom he waged a war of wills as a child and with whom his memory still contends.

The book comes after a long wait, during which there have been rumors that he would deal with his American —and British—detractors who had taunted him for excessive slowness in battle and for his eccentricities. His book is relatively mild toward his harshest critics. He speaks plainly of the failings of British commanders such as Gort, Ironside, Auchinleck and others, and notes his disagreements with various American leaders. He is roughest with General Eisenhower. Although he praises the Supreme Commander as a military statesman, a great President and one of the four men—along with his father, Churchill and Alanbrooke—who influenced him most, he denies that he is a great soldier in the true sense of the word, and is harsh in his implications as to the reasons for and the consequences of the General's command decisions in northwest Europe.

He praises as well as censures, speaking highly of his brilliant chief of staff, General de Guingand, his equally able chief of intelligence, Brigadier Williams, and other members of 21 Army Group's staff. He calls Churchill the greatest Englishman of all time and Brooke the finest soldier any nation has produced for many years. Of Field Marshal Alexander, under whom he served at the time of Alamein, he says: "He was the perfect commander-in-chief to have in the Middle East, so far as I was concerned. He trusted me."

One will learn more operational details from two earlier volumes signed by him, which his staff helped prepare, and from books by General de Guingand and Chester Wilmot. Monty has not always rechecked his documents, and he omits many pertinent details. He covers the important Walcheren Island fight in a paragraph and he decides to omit discussion of the battle in the Ardennes almost altogether.

Many of the stories of his early life have been told, and sometimes at greater length, by Alan Moorehead, his biographer. Nonetheless, the early chapters are especially revealing on the development of the author's personality. We can better understand why he tended to resent authority, why he withdrew into himself, and why he adopted his cocky attitude toward the world. One can sense his self-confidence amidst the tedious listings of the last details of his battle orders. He likes a humorous anecdote with a touch of broadness, as one can tell from the poem he reprints about his trousers descending from Heaven; or the story of his aide who had great trouble getting a *vase de nuit* (Monty's words) for the Field Marshal from a Frenchwoman in Normandy because he had prudishly asked for a vase for Montgomery's flowers. He adds unconscious humor with such accounts as that which concerned an occasion at the end of the war when, after too much rich food at an official luncheon in Antwerp, he became sick in his car while riding along streets filled with cheering Belgians. He says that when he apologized to the driver "for the mess in his car," the latter drew himself up and said, "Sir, it's an honor." "And he meant it," says the Field Marshal.

The author's doctrine of command and his thoughts on high command in war will be of interest to military men, although at times they seemed designed to point up faults of indecisiveness and of compromise which he attributes to General Eisenhower. Perhaps the key to his own actions is contained in his view that morale is the highest single factor in war and the best way to achieve it is by success in battle. It was said of him that he promised his soldiers he would never attempt a battle he could not win. It was his insistence on making sure everything was in readiness which made him a master of the setpiece battle. It also brought unflattering comparisons with McClellan.

The value of preparation is outlined at length in Montgomery's account of the background of the El Alamein battle. He leaves to other accounts the story of the fighting, but he describes with loving care the training, the selection of commanders, and the planning. He says that he alone wrote the directive for the attack. "This was the master plan and only the master could write it." He sets much store by careful one-man control of the battle and the fighting of the action in exact accordance with the plan. In writing of Sicily, he criticizes the lack of proper command coordination which, he says, permitted Patton to wheel toward Palermo instead of in the direction Montgomery was going. However, when de Guingand wrote of this action in *Operation Victory* (1947), he felt it necessary to defend his chief against charges that he advanced too slowly and that he gave the Americans "an unfair share of the fighting."

The author is obsessed with the idea that his battles were fought in complete accordance with his original plans. Sir John Kennedy (whose book is reviewed elsewhere in this issue) remarked after visiting the Field Marshal in Normandy in August 1944: "Monty took his usual line that all has been done according to plan. . . . It is true that this is all according to plan, but what is not so clear is whether Patton's initiative has not speeded up the whole business enormously. My impression is that it has."

The Field Marshal stoutly denies the accusation that he had planned to break out south and east of Caen, but failed because of lack of boldness. He is on sound ground relative to the basic plan. His forces, as General Bradley pointed out in *A Soldier's Story*, were supposed to draw German forces to their front while the Americans made the main thrust to the west. Montgomery is not content with establishing this fact. He implies that Eisenhower was dense or that he was led by a cabal at SHAEF into thinking that the Field Marshal intended to break through on the Caen front on 18 July. Wilmot admits that Montgomery may have misled Eisenhower by a message in which he said

Selected Check List of the Month's Books

This run-down of some of the books received for review during the month preceding our deadline is to give our readers who like to follow current literature a monthly check list of the most important, useful and potentially popular books. Full reviews of some of these books may appear in this or subsequent issues. Any of these titles may be purchased through the Combat Forces Book Service.

BAND OF BROTHERS. By Ernest Frankel. The Macmillan Company, 1958. 360 Pages; $4.50. A novel of the Korean War which concerns a company of marines and its CO who is transformed from an insecure, inexperienced and distrusted leader into a battlehardened, respected veteran.

DIVINE WIND. By Capt. Rikihei Inoguchi, Comdr. Tadashi Nakajima and Roger Pineau. U. S. Naval Institute, 1958. 240 Pages; Illustrated; Index; $4.50. The first full account of the conception, organization, tactics and training of Japan's Kamikaze pilots. Two of the authors were on the staff of the Naval Special Attack Force from beginning to end.

THE FIGHTING FIRST DIVISION. By John Hurkala. Greenwich Book Publishers, 1958. 201 Pages; $2.50. Personal experiences of a member of an A&P platoon who went through Africa, Sicily, England, Normandy, France, Belgium and Germany. En route he picked up four Bronze Stars, the CIB, and three Distinguished Unit Citations.

HITLER'S SPIES AND SABOTEURS. By Charles Wighton & Gunter Peis. Henry Holt & Company, 1958. 285 Pages; $3.95. Exploits of agents of the Abwehr, based on the diary kept by Gen. Erwin von Lahousen, right-hand man to Admiral Canaris. Included is the story of the Nazi spies who landed on the East Coast.

IN SPITE OF HELL. By Major Ernest L. Wrentmore, USAF Ret. Greenwich Book Publishers, 1958. 193 Pages; $3.00. Personal experiences of a soldier of the 60th Infantry (5th Division) who enlisted at twelve for WWI—the youngest in the AEF to see combat. He was wounded twice and severely gassed, and recommended for the Medal of Honor.

MR. DAVIS'S RICHMOND. By Stanley Kimmel. Coward-McCann, Inc., 1958. 214 Pages; Illustrated; Index; $7.50. Life in the Confederate capital during the Civil War, in more than 200 rare pictures and 70,000 words of text. Parallels this author's excellent *Mr. Lincoln's Washington* [ARMY, February 1958].

OLD GUNS AND PISTOLS. By Noel Boston. Essential Books, 1958. 139 Pages; Illustrated; Index; $5.25. A chatty, informal history of guns from matchlock to percussion cap. Has a list of British and American gunsmiths, and the British foot regiments before and after the reorganization of 1881.

THE POST READER OF CIVIL WAR STORIES. Introduction by E. B. Long. Doubleday & Company, 1958. 331 Pages; $3.95. Nineteen of the best from *Saturday Evening Post,* including William Faulkner, MacKinlay Kantor, James Warner Bellah, Clifford Dowdey, Stephen Vincent Benét, John W. Thomason, Laurence Stallings, and John Marquand.

THE STICK AND THE STARS. By Comdr. William King. W. W. Norton & Company, 1958. 192 Pages; $3.50. Experiences of a submarine commander of the Royal Navy during the Norway campaign, war patrols in the North Sea, the struggle for the Far East, and individual attacks.

TOUCH FOOTBALL. By Col. John V. Grombach. The Ronald Press Company, 1958. 125 Pages; Illustrated; Index; $2.95. Touch football combines the thrill, advantages, and highly complex play without the need for costly equipment, uniforms, and protective gear, yet involves minimum risk of injury. "Frenchy" Grombach is a former collegiate (West Point), amateur and Olympic athlete.

attacks on the British and American fronts were going to set the Normandy front aflame and requested maximum air support for both operations. Neither Wilmot nor Montgomery recalls that the British attack—a limited one according to Montgomery—was preceded by a bombardment in which 7,900 tons were dropped, while the main breakout near St. Lô was supported by a 4,790-ton attack. It is clear from Wilmot's account that the British press, as well as Eisenhower, was fooled. Montgomery's press statement on his first day's "breakthrough," taken with news of the "colossal" bombing, "naturally led Fleet Street to the conclusion that this was another and greater Alamein and the headlines were written accordingly."

The Field Marshal is bitterest about the refusal of the Supreme Commander to accept his "narrow front" approach to Germany in August-September 1944. He reprints his September 1944 statement that "one really powerful and full-blooded thrust towards Berlin is likely to get there and thus end the German war." However, he now says more guardedly that, if given proper administrative and logistical backing in August, he believed "we should have secured bridgeheads over the Rhine and seized the Ruhr before the winter set in." He writes of his hopes of ending the war quickly, saving tens of thousands of lives, and bringing relief to the people of Britain, which were frustrated by Eisenhower's "broad front" decision, as if it were certain that his plan would have worked. He does not indicate that official studies of the supply situation raise doubts that his powerful thrust could have been adequately supplied at that time. He also fails to note that his biographer, Alan Moorehead, who was with 21 Army Group during the period of the controversy, declined to make a final judgment on the debate, saying that it was difficult for a non-expert to say who was right. He also seems to forget that de Guingand, his chief of staff, agreed with Eisenhower. Even Wilmot, his greatest champion, admits that, in view of Hitler's resolve to fight in the streets of Berlin, it was doubtful if even the seizure of the Ruhr would have ended the war in 1944. He wisely doesn't add that a number of Americans agreed that a single thrust would have succeeded—because their proviso was that General Patton should command it.

The last 180 pages of the book have more new material than the other sections. The Field Marshal outlines his efforts as commander of the British Zone of Occupation to restore normal relations with the Germans. He favored firmness toward the Russians, but did not agree with Churchill that the Allies should remain in the zone promised the Soviet Union until a number of differences were settled. He adds that General Eisenhower, while Chief of Staff, said perhaps they should have stood firm, even if it meant fighting. But Montgomery felt that the British people in 1945, out of war-weariness and feeling of friendship toward the Russians which had been developed during the war, would not have fought.

Montgomery's efforts to reorganize the defense machinery of postwar Britain as Chief of the Imperial General Staff, in the face of apathy and insufficient means, will arouse the sympathy of military men. Some of his arguments with the civilian authorities were hilarious. He tells, in all innocence, of his proposal to his Air and Navy colleagues that they accompany him to the Prime Minister to say they had lost confidence in the Minister of Defence, A. V. Alexander. He was quite put out when they, on sober reflection, declined on the ground that the action was probably unconstitutional. It is easy to see why he labels a chapter dealing with this period, "I Make Myself a Nuisance at Whitehall."

He has not treated in detail the period in which he acted as Deputy Supreme Commander of SHAPE, but he has offered provocative suggestions on the reorganization of NATO to meet new challenges. He calls for an overhaul of the NATO structure to make it less cumbersome and less expensive. He says this should be accompanied by moves to keep the Russians confined to a land strategy, by the development of a global early-

warning system and centralized global planning for air defense, and by a broadened NATO organization which would practice its policies on a world scale. The Western Alliance, he says, was brought into being on a basis of fear of aggression, but must have something better than fear to hold it together. He calls for closer cooperation "in wider fields than mere defence of territory." "Western unity," he concludes, "is the only thing the Russians fear."

The book succeeds in exhibiting many sides of Field Marshal Montgomery. It shows him as an egotist, a brilliant showman, a sentimentalist, a careful planner, a strong-minded individual, a talented leader who managed to gain the affections of his troops. It confirms the statement attributed to one of his former subordinates, that "he was a fine man to serve under, a hard man to serve with, and an impossible man to serve over." And one feels he liked it that way.

Our Intelligence System

CENTRAL INTELLIGENCE AND NATIONAL SECURITY
By Harry Howe Ransom
Harvard University Press, 1958
287 Pages; Index; $4.75

Reviewed by
DR. GEORGE S. PETTEE, *author of* The Future of American Secret Intelligence *(1946), who is Assistant Director, Operations Research Office, The Johns Hopkins University.*

Among the most significant of the changes in American affairs that have occurred in the last two decades is the growth of what is now known as "the intelligence community." Among the most complex of our present problems in the operation of our system of government is that of how the public can know the minimum it must about this intelligence community so that the basic democratic function of critical control of government can be kept vital. Mr. Ransom's book is a rather fascinating one in this connection. What it represents is a hard-working and thoroughgoing effort to describe the intelligence system without the advantage of inside knowledge. This would be an important and worthwhile effort even if the book did not turn out as good as it does. Actually it probably is worthwhile reading even for the insiders —not because it is complete and faultless but because it is quite substantial in spite of such omissions and errors as it may have in minor degree.

The account captures not only the main architecture, but to a great degree the dynamics of the growth and the further growth that is still in progress. The Central Intelligence Agency is dealt with in necessarily somewhat summary terms, but the complex of agencies working together is well described, and the historical development is clearly shown. Also, most of the serious problem areas are clearly identified and well discussed. Best of all, the book carries the apparatus of a thorough effort, an excellent bibliography of the unclassified literature, many notes, and a good index.

The impact of technical military advance is emphasized, but perhaps not enough. Lead times are spoken of as being as long as four years, which seems to understate their prevailing length, and the really heavy impact of the current technical dynamics is given less attention than it warrants. The important and difficult problem of "net estimates" or "strategic forecasts" is mentioned appropriately and necessarily without much detail. Comments on the significance of espionage tend to balance the half-truths, that it accounts for a very minor portion of the bulk of information, but that it also may account for some necessary and significant bits. One may be inclined to argue with the author about the Pearl Harbor case, since he seems to hold that intelligence was inadequate, while also using the fact that intelligence was available to prove that the ineffective use made of the intelligence was the major fault. The case made by Roger Hilsman, that the whole process of making something out of the information after it is acquired is at fault due to an inadequate philosophical base, is properly presented but without any effort to bring it to clear conclusions.

One of the best features of this book is its demonstration that the knowledge which it is important for outsiders to have, for judgment as citizens, is so largely available. If free scholars can do so well on a subject on which secrecy is so prevalent and so necessary, the damage done by secrecy will be far less cause for anxiety than it would be otherwise. From now on, until another author does better, anyone who wishes to begin a study on our intelligence system can begin by reading Ransom.

Managing a Modern War

THE BUSINESS OF WAR
By Maj. Gen. Sir John Kennedy
William Morrow & Company, 1958
375 Pages; Maps; Index; $5.00

Reviewed by
DR. FORREST C. POGUE.

The business of war involves the proper fusion of political aims with military operations. Experts in the one line often develop strong antagonisms to those in the other, so that controversies between soldiers and civilians sometimes threaten to become deadly. It is of this interplay of political and military forces and personalities that General Kennedy, who was responsible for plans and operations between 1940 and 1944, under the four British wartime Chiefs of the Imperial General Staff (Gort, Ironside, Dill and Brooke), has recorded his recollections and views.

Relations between political and military leaders in Britain during World War I were particularly bitter. Some of this feeling was still evident in the early days of World War II, if one may judge by Kennedy's accounts of the attitudes of Gort and Ironside toward politicians. He says that Gort, Chief of the IGS, and Hore-Belisha, Secretary of State for War, were barely on speaking terms for months. Ironside, soon after he succeeded Gort, remarked one day that he was going "to waste a morning educating these old gentlemen in the Cabinet in their job."

The Army's defeats in 1940 and Churchill's accession to power changed the situation. As a frustrated strategist and former colonel in World War I, the Prime Minister had definite ideas on how the war should be won. Initially, he thought and said that the Army would play merely a secondary role in the war and that the task could be done only by the staying power of the Navy "and above all by the effect of air predominance." At times, says Kennedy, the military chiefs wondered if his great political leadership compensated for his mistakes in strategy. Although Churchill was rude to the military leaders, no deep-seated enmity ever developed. His personal standing was such that no military man could have successfully defied him. But the point is that his foibles never blinded the British chiefs to his real worth.

The author believes that matters improved considerably when Field Marshal Sir Alan Brooke became Chief of the Imperial General Staff near the end of 1941. He supports the thesis that Brooke was largely responsible for keeping Churchill set on strategy which was adopted.

On the Mediterranean-versus-Cross-Channel controversy, the author defends Brooke's views but is less dogmatic than his chief. He admits that if the British had had their way "there can be little doubt that the invasion of France would not have been done in 1944." In a note, written in 1951, Kennedy adds: "Looking back on it now, I think it is only fair to say that the Americans were probably more nearly right than we were in this particular matter."

Sir John does not insist that military views are the only ones which soldiers should consider. He does believe it dangerous to base military campaigns on political considerations where there is little or no military justification for the operation. He condemns the Greek campaign on this ground and blames Wavell for agreeing to go ahead with it. The author's view is contained in instructions

which he and Field Marshal Dill drafted to guide General Auchinleck when he succeeded Wavell as commander in the Middle East. They explained that political pressure was sometimes so powerful that it was necessary to take risks which from a military view were inadvisable. In such a case the military commander should make clear the risks involved from the military point of view. "You may find it necessary, in the extreme case," they added, "to dissociate yourself from the consequences."

Besides the close look at Churchill and Brooke, General Kennedy gives us excellent pen portraits of Ironside, Gort, Dill, Hore-Belisha and others. His account—based on diary entries, wartime notes and a postwar narrative, which have been edited by Bernard Fergusson—is especially good on Churchill's early attempts to control strategy. It is an extremely valuable study for those who wish to understand the problems of "managing" a modern war.

Air Force Missiles

VISTAS IN ASTRONAUTICS, Volume I
Edited by Morton Alperin, Marvin Stern & Harold Wooster
Pergamon Press, 1958
330 Pages; Illustrated; Index; $15.00

Reviewed by

MAJOR PATRICK W. POWERS, *Artillery, on duty in the Office of the Chief of R&D, Department of the Army, author of many articles on missiles and rockets in this magazine.*

Vistas in Astronautics is the most technical work of these three. It is composed of a series of monographs presented at an astronautics symposium in 1957 which was sponsored by the Air Force and the Convair Aircraft Corporation. The book carefully explores the status and problems of space flight in the United States to include the re-entry problem, tracking and communications, space environment and measurements, propulsion, orbits, and human factors. The treatment of these subjects is highly technical and beyond the grasp of the majority of military readers. It is interesting to note the dramatic increases in our knowledge of space since the spawning of the earth satellites, already outdating some portions of this book.

GUIDED MISSILES
By Department of the Air Force
McGraw-Hill Book Company, 1958
575 Pages; Illustrated; Index; $8.00

Reviewed by

LT. COL. JAMES W. WALTERS, JR., *Artillery, on duty in the Missiles and Space Division, Office of the Chief of R&D, Department of the Army.*

Guided Missiles is ideally suited for those who would like to acquire in one volume a fundamental knowledge of the major facets of missilery. A reprint of an Air Force Training Command manual, this book includes basic aerodynamics, propulsion, guidance and control, and instrumentation associated with the various guided-missile systems. The material is presented in clear, simplified terms with many illustrations and diagrams.

For full comprehension, the reader should have a basic knowledge of physics, electricity, math through trigonometry, and elementary chemistry and electronics. Of particular value for those who have been out of school for several years, this text reviews all the necessary basic laws and theories in just enough detail to refresh one's memory of high-school or college studies.

In essence, *Guided Missiles* is a simplified but yet comprehensive condensation of the standard guided-missile courses taught at our service schools. It is a superior basic reference for missilemen. Although one will not vicariously become a guided-missile expert by study of this book, he certainly can acquire a very worthwhile "talking" background of the field. This book is most appropriate for the military reader.

THE UNITED STATES AIR FORCE REPORT ON THE BALLISTIC MISSILE: Its Technology, Logistics and Strategy
By Lt. Col. Kenneth F. Gantz, USAF
Doubleday & Company, 1958
338 Pages; Illustrated; $4.00

Reviewed by

MAJOR JAMES W. DUNHAM, *Artillery, on duty in the Missiles and Space Division, Office of the Chief of R&D, Department of the Army.*

This book consists of essays reprinted from the *Air University Quarterly Review*, with a preface by General White, USAF's Chief of Staff, and an introduction by General Schriever, who commands the Ballistic Missiles Division of ARDC (quoting the program cost of $3 million per day from 1954 to date). In "Air Force Missile Experience," Colonel E. N. Hall dispels "some of the mists of obfuscation that pervade this field," and reassures the neophyte that missilery is merely an extension of the Air Force's "rich background of familiarity" with "the airplane development art." Claims of unique Air Force competency in the "subtle techniques" of missile structure development stretch the credence of even the most partisan reader.

The book contains some inconsistencies. For example, in concepts of logistic support for missile units, and in the degree to which missiles will replace manned bombers.

The book considers only "massive retaliation," thus dictating establishment of fixed, hardened bases. Personnel problems (boredom, quarters, duty hours) and control ("Force" versus "national" reaction times, automatic rules of engagement) are well treated, but there is no consideration of the flexibility inherent in mobile employment.

To sum up, the book is excellent orientation for Air Force personnel, but its partisan approach precludes general orientation for the Army reader.

Manual for Tankers

THE TANK COMMANDER'S GUIDE
By U. S. Army Armor Human Research Unit
Military Service Publishing Company, 1958
418 Pages; Illustrated; Index; $2.95

Reviewed by

MAJOR ROY MOORE, JR., Armor, *author of several articles on armor, as well as a book on the tank company.*

The Tank Commander's Guide is a by-product of two years of intensive study by research personnel of the U. S. Army Armor Human Research Unit to determine the functions and duties of the tank commander. In addition to interviewing a large number of tank commanders, the researchers analyzed some ninety different reference sources, including field manuals, technical manuals, training circulars, and other military publications. When the notes and other material were edited and revised, the researchers found they had not only determined the job requirements of the tank commander, but had also developed a useful manuscript—one that could enable tank commanders to perform their jobs more effectively.

Essentially, the *Guide* is a 425-page digest of all the many facets of training required of a knowledgeable tank commander. There has also been included a number of general subjects—command leadership, conduct of training, combat intelligence and atomics—all slanted toward the job of tank commander.

I do not mean to imply that everything a tank commander needs to know can be found in this book, but certainly he needs to know all that is in it. In fact, any tank crewman aspiring to demonstrate a high level of competence under the forthcoming MOS proficiency tests should find this book a worthwhile manual.

For the tank platoon leader or company commander this text should serve as a handy checklist applicable to his unit training program. Using it as a sort of "minimum standard," the unit training program or parts of it could be quickly verified as to scope and content.

As a consolidated text of information the tank commander needs to know in order to perform effectively, *The Tank Commander's Guide* should prove an important and highly useful addition to current official training publications.

ASSOCIATION OF THE U. S. ARMY

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The Association of the U. S. Army shall be an organization wherein all who are in accord with its objectives may join in the exchange of ideas and information on military matters, and in fostering, supporting, and advocating the legitimate and proper role of the Army of the United States and of all its elements, branches, and components in providing for and assuring the Nation's military security.

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REPORT FROM YOUR AUSA CP

The printing of the revised By-Laws of the Association has been completed. New members and renewals will receive a copy automatically. A copy will be sent to other members upon request to National Headquarters.

Even in far-away Lebanon the Association of the U. S. Army brings soldiers together to discuss matters of importance to the Army and to themselves. In an olive grove near Beirut airport, 250 members of the 24th Airborne Brigade who belong to AUSA held a meeting on 15 September 1958. Brig. Gen. David W. Gray, who presided, reviewed the accomplishments of the Association. In particular he stressed past and forthcoming actions which affect the Army and military personnel, and discussed the importance of the Association's Fourth Annual Meeting. After the meeting word about AUSA got around and 408 new members signed up.

1959 Election procedures are governed by the following provisions of the By-Laws of the Association; amplifying information is contained in brackets, thus [ ]:

ARTICLE VII. ELECTIONS

Section 1. Nominating Committee. The Chairman of the Council of Trustees shall appoint a Nominating Committee of five (5) members from among the Council of Trustees. [This was done 15 August 1958.]

Section 2. Election Procedures. Election procedures will be as follows:

a. The Nominating Committee shall submit a slate selected from among the Advisory Board of Directors of at least one (1) nominee for each position falling vacant in the Council of Trustees. Likewise, the Nominating Committee shall submit a slate of at least one (1) nominee for the offices of President and Vice President. These nominees may be from the general or associate membership. [This slate will be published in our next issue.]

b. After publication of the slate proposed by the Nominating Committee [see next issue], and before a date (set by the Council of Trustees) [Monday, 2 February 1959] after such publication, additional candidates may be proposed by the membership. These additional candidacies must comply with the following conditions:

1. Eligibility must comply with the requirements of a, above.
2. Each petition for candidacy must be supported by at least 100 signatures of bona fide members of the Association of the U. S. Army.
3. Accompanying each petition, there must be a written statement by the candidate that he desires to be a candi-

date, and that he will be able to attend regular and special meetings of the Council of Trustees if elected.

4. As an inclosure to each petition, there will be a brief biography [including full name, present address and present position] and photograph suitable for publication.

c. The Nominating Committee will rule on the compliance with b, above, and will certify additional candidates for inclusion on the ballot. [This will be done immediately after 2 February 1959.]

d. No votes for write-in candidates except those whose candidacies have been processed as in b and c above will be counted by the official tellers.

e. The slates shall be submitted to the voting membership by printed ballot, not later than 1 March of the election year. Such ballots will be distributed to the voting membership in a manner determined by the Council of Trustees. [This will be done in March 1959 issue of ARMY.]

f. Ballots will be counted under the direction of the Council of Trustees not later than the next first day of May. [This means no ballots will be counted which are received after 1200 noon, 1 May 1959.] Candidates shall take office at the June meeting of the Council. A plurality of the votes cast shall be sufficient for election.

Section 3. Eligibility of Candidates. Only members of the Advisory Board of Directors shall be eligible for membership on the Council of Trustees. [The terms of three of the present members of the Council expire in June 1959.] Any general or associate member shall be eligible for the office of President or Vice President.

* * *

ARTICLE III. MEMBERSHIP

Section 7. Eligibility for Office. Members of the Regular military services or National Guard or Reserve personnel on extended active duty *may not hold any office or serve on the Council of Trustees or Advisory Board of Directors.*

WALTER L. WEIBLE
Lt. Gen., USA, Retd.
Executive Vice President

AUSA REGIONAL ACTIVITIES

CHAPTERS

ALBUQUERQUE CHAPTER—Chapter, at meeting 20 October, passed resolution for transmittal to National Headquarters providing for age 55 retirement under Title III of PL 810.

AUGUSTA AREA CHAPTER—Safety Section, Fort Gordon, received first Augusta Area Chapter certificate for 100 per cent membership in the Chapter.

BRAXTON BRAGG CHAPTER—Maj. Gen. Harry McK. Roper, Trustee of the National Association, made the principal address at 29 October meeting. General Roper stressed the requirement for a strong and mobile army in limited war and as a deterrent to general war. About 330 attended the meeting, including the mayors of Fayetteville and Sanford, Gen. John R. Hodge, and Maj. Gen. R. F. Sink. Local publicity was excellent.

EAST BAY CHAPTER—Lt. Gen. C. D. Palmer, Commanding General, Sixth U. S. Army, was honored guest at reception and dinner 16 October at the Officers Club, Oakland Army Terminal.

FORT LEE CHAPTER—Chapter held picnic, with barbecued chicken dinner as a highlight, at Horkans Point, Lake Jordan. All Fort Lee personnel were invited. Event was well covered in press; those attending requested that this be an annual event.

KENT-SUSSEX CHAPTER—More than a hundred attended 24 October meeting. Among the honored guests were Lt. Gov. David P. Buckson; Brig. Gen. R. J. Goewey, CG Dover Air Force Base; Col. L. S. Moomaw, Deputy Commander, Dover AFB; Col. R. C. Dougan, Senior Army Adviser, Delaware ARNG; Lt. Col. H. W. Abel, 1607th Air Transport Wing. CWO Edward R. Knight reported on AUSA's Annual Meeting; Colonel Dougan spoke on AUSA Aims and Objectives; Mr. Guy E. Mallery of the Martin Company, presented the *SeaMistress Concept* along with a talk on "Limited War and STRAC Mobility." The meeting drew front-page coverage in the local press.

OKLAHOMA CITY CHAPTER—Election of Chapter officers at October meeting received wide press coverage. Four speakers made up the program: Maj. Gen. W. S. Key, on "Our National Defense;" Brig. Gen. Frederick A. Daugherty, on "The National Guard;" Brig. Gen. Paul B. Bell, on "The 95th" (Reserve Division); Col. Robert John-

YAKIMA, WASH. Planning for Yakima Valley Chapter's charter-award banquet (held 15 October) are (left to right) Major James R. Meyers, Secretary; E. Frederick Velikanje, First Vice President; Major Jim E. Cherry, Secretary; Fred C. Schneider, President.

FORT SLOCUM, N. Y. Westchester Chapter installs its new officers. Left to right: Jesse Daitch, First Vice President; Harold Greene, President; Raymond C. Miller, Second Vice President. John E. Leykam was elected Secretary.

son on "The Talking Army," a short course in public relations and publicity.

ORLEANS CHAPTER—Maj. Gen. Edward J. O'Neill, CG U. S. Army Communications Zone, Europe, presented the Chapter's charter on 6 October. Meeting elected officers, and heard General O'Neill speak on the Chapter's goals.

PALM BEACH CHAPTER—A dinner meeting 27 September featured a talk and demonstration of a lie detector set used by the local States Attorney's office.

PIKES PEAK CHAPTER—Lt. Gen. Charles E. Hart, CG U. S. Army Air Defense Command, was principal speaker at meeting 29 October. Mr. Samuel F. Downer, Vice President of AUSA, reported on Fourth Annual Meeting.

SAN BERNARDINO COUNTY CHAPTER—Among guests at 3 October dinner meeting were Representative Harry Sheppard, Brig. Gen. Edgar T. Conley, Jr., Hon. E. D. Kremer (Mayor of San Bernardino). The Chapter presented a Certificate of Achievement to Mr. Savage for his contributions to the Chapter during its first year.

SANTA BARBARA-VENTURA COUNTY CHAPTER—A dinner meeting, with 53 members and 30 wives attending, marked the Chapter's charter presentation. Lt. Gen. C. D. Palmer presented the charter; the other principal speaker was Dr. Kritz K. Feldman, whose subject was the problems of placing objects in orbit.

SARASOTA-BRADENTON AREA CHAPTER—Meeting 30 September had, as principal business, the drafting of resolutions for submission to National Headquarters in preparation for 1958 Annual Meeting.

SEATTLE CHAPTER—Maj. Gen. Louis W. Truman, CG 4th Infantry Division and Fort Lewis, was principal speaker at 28 September meeting. Chapter presented Certificate of Appreciation to Mr. Arthur T. Lee, Past President. Names of Executive Committee were announced.

SOUTH HAMPTON ROADS CHAPTER—The Hon. Porter Hardy, Member of Congress from Virginia, addressed the Chapter at its meeting 9 October. Mr. Hardy made a strong plea for the Army's own tactical aircraft, and indicated "You can't handle a situation like Korea, Matsu or Quemoy with just an air force." Mr. Hardy supported a strong Reserve and National Guard. The speaker received a standing ovation.

SOUTHEAST ALABAMA CHAPTER—More than seven hundred persons, including Congressmen Andrews, Grant and Selden, Lt. Gov. Hardwick, and Mr. John Horne representing Senator Sparkman, attended the 25 September meeting held at Ozark, Alabama. Maj. Gen. Bogardus Cairns introduced Lt. Gen. Clark L. Ruffner, CG Third U. S. Army, who spoke on the Pentomic Army.

SOUTHWEST OKLAHOMA CHAPTER—Maj. Gen. John A. Dabney, Special Assistant to the CG, CONARC, addressed 9 October meeting on the subject of mobility. Meeting received good publicity in local news media. On 30 September, the Northwest Kiwanis club had an AUSA program, featuring a talk by Lt. Col. Herbert L. Garris on "The Infantry Soldier." Colonel Garris, an artilleryman, stressed that the artillery's mission is to assist the infantry. Col. Joseph R. Peller, Chapter President, introduced the speaker.

THIRD ARMORED DIVISION CHAPTER—Speaker at 30 July meeting was Maj. Gen. T. F. Van Natta, who urged support of the Chapter and the Association. On 14 October, the Chapter discussed the possibility of using AUSA memberships as awards to outstanding soldiers, and heard Lt. Gen. F. W. Farrell discuss "The Role of the Army in the Present Day." Another feature of the meeting was a skit depicting a day in the life of an Army wife, staged by the wives of personnel of the 1st Battalion, 32d Armor.

WASHINGTON STATE CHAPTER NUMBER 1—A buffet dinner and social hour began 21 September meeting at Fort Lewis. Maj. Gen. Louis W. Truman spoke briefly on AUSA and extended an invitation to the Chapter to continue meeting at Fort Lewis. Maj. Gen. John J. Binns, Chief of Staff, Sixth Army, spoke on "Let's Be Ready," which touched upon AUSA's function in assisting the Army. Five resolutions, for consideration at AUSA's Annual Meeting, were approved.

WESTCHESTER COUNTY CHAPTER—New officers elected 9 September, and committees appointed as follows: Membership, Publicity and

FORT MONROE, VA. Gen. Bruce C. Clarke, CG of CONARC (center), who was instrumental in organizing the Virginia Peninsula Chapter, with Gen. John E. Dahlquist (left), member of AUSA's Council of Trustees and keynote speaker, and George T. Abernathy, an official of Newport News Shipbuilding & Drydock Company, first President, at charter meeting on 16 September.

LAWTON, OKLA. Lt. Col. Herbert L. Garris, Arty, used this figure of a doughboy to emphasize his talk on artillery's mission to assist the infantry at Southwest Oklahoma Chapter's meeting on 30 September, when the Northwest Kiwanis Club featured an AUSA program. With him are John Stannard (left), President of Lawton's Kiwanis, and Col. Joe R. Peller, President of Southwest Oklahoma Chapter.

COLORADO SPRINGS, COLO. Jasper D. Ackerman (right) reelected President of Pikes Peak Chapter, receives citation signed by senior field-grade and general officers of Fort Carson and ARADCOM from Lt. Gen. Charles E. Hart, ARADCOM commander. President of world's largest chapter was honored on 23 July at Antlers Hotel "in appreciation for his personal service . . . which has broadened and deepened civil relations in the community."

HAMPTON ROADS, VA. Rep. Porter Hardy, Jr., tours Hampton Road's nerve center before addressing South Hampton Roads Chapter on 9 October. Briefing him on air-defense operations are Col. Minot B. Dodson, 3d Arty Group CO (left) and Capt. J. W. La Fevor, CP operatons chief.

HEIDELBERG, GERMANY. Three USAREUR general officers chat with General Eddleman (second from left) before Heidelberg Chapter's meeting on 8 September. Others are (left to right) Brig. Gen. Edward F. Penasat, Provost Marshal and Chapter President; Maj. Gen. Frederic J. Brown, Chief of Staff; and Maj. Gen. R. M. Osborne, G2.

Historical, Projects and Plans, Program, Entertainment, Speakers, Awards, Advisory, Special Events Displays, Property, Finance, and Chaplains.

WILLIAM PENN CHAPTER—USO awarded the Chapter a certificate for its assistance with the USO program. Volunteer Chapter members distributed food to more than eight thousand service men and women attending Armed Forces Religious Emphasis Day services held in Convention Hall. Napkins, imprinted with "Support Your Army, Join the Association of the United States Army, William Penn Chapter," were supplied by the Chapter.

WOLTERS CHAPTER—William S. Bigham, Vice President of Central Texas-Fort Hood Chapter, was principal speaker at 10 October meeting. His subject was "The Problems of Fitting AUSA into the Local Community." At this meeting, awards were given to the Mineral Wells and Stephenville high school bands for their services and to Southern Airways for its safety record in training helicopter pilots. Awards were given also to J. W. Wilson, President of Mineral Wells Chamber of Commerce, and Frank Fulgham, President of Weatherford Chamber of Commerce and new President of the Chapter.

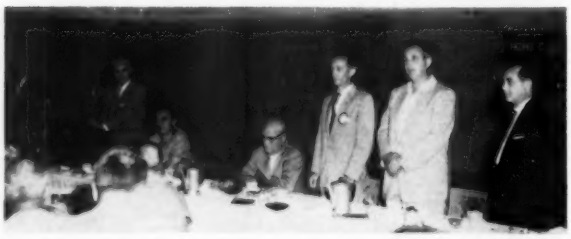
YAKIMA VALLEY CHAPTER—Initial meeting, to elect officers, held 15 October.

ROTC COMPANIES

CAVALIER COMPANY, University of Detroit—Company members flew to a Nike site by H-21 helicopter on 4 October.

EASTERN CADET OFFICERS' COMPANY, Eastern Kentucky State College—Meeting on 1 October decided that the Company would sponsor a float in Homecoming Parade.

EDMUND R. WALKER COMPANY, University of Connecticut—Meeting on 25 September resulted in decision to cooperate on Military Ball with Scabbard and Blade and AFROTC. Display for University Activities Fair is completed.



FORT SILL, OKLA. Col. J. R. Peller, President of Southwest Oklahoma Chapter (at microphone) introduces committee heads to Lawton's Kiwanis Club at its luncheon on 8 September. Left to right: Ned Shepler, public relations chairman; Brig. Gen. Philip C. Wehle, Assistant Commandant, Artillery & Missile School; Col. Peller; Brig. Gen. John C. Hayden, CG of troops at Sill; Park Stovall, First Vice President; Floyd Zook, membership chairman; Emmett Keough, special events chairman; Bernell Gilbert, awards committee chairman.

IDAHO STATE COLLEGE COMPANY, Idaho State College, Pocatello, Idaho—Lt Col. Harmon P. Rimmer, PMST, spoke on National Defense reorganization at 30 September meeting. On 28 October Cadets Buckles and Duff reported on their participation at AUSA's Annual Meeting.

ILLINI COMPANY, University of Illinois—Captain Jesse R. Bushee, Illinois ARNG, spoke on the history and purposes of the National Guard at meeting 29 October.

JOHN CARROLL UNIVERSITY COMPANY, John Carroll University, —Organization meeting for new school year held on 17 October, at which plans for programs were outlined. Pledges were instructed to report 24 October for fatigue duties.

LA SALLE COMPANY, La Salle Military Academy—Twelve new members were inducted into AUSA at meeting on 26 October. Thirty members of the Company, Reverend Brother Walter, FSC, Commandant of the Academy, and Captain Roy E. Lounsbury, Faculty Adviser, heard Captain E. P. Freedman report on his experiences as an observer at an atomic blast in Nevada. Captain Freedman discussed the effect of the blast on men and equipment. A social committee was appointed for the coming school year.

MAD ANTHONY WAYNE COMPANY, University of Toledo—Meeting on 5 October planned activities for future meetings, including a program of recruiting new members, and improving attendance by increasing acceptability of meeting programs. The Company is planning to participate in an ROTC speaking program in the local high schools.

MOCCASIN COMPANY, University of Chattanooga—Organization meeting held in October. Company will continue project of providing name tags for the entire battalion.

PENNSYLVANIA STATE UNIVERSITY COMPANY—Meeting on 30 September included slides from 1957 Annual Meeting.

SIOUX COMPANY, University of North Dakota—Attendance at first meeting, on 16 October, was 64. Col. A. E. Forsman, PAS, and Lt. Col. Lloyd E. Patch, PMST, were guests.

SOONER COMPANY, University of Oklahoma—Col. R. G. Johnston, Chief, Oklahoma Military District, spoke on "The Army of the United States," at meeting on 23 October. Sixteen new members were inducted. The company made a trip to West Point on 24-25 October.

TEXAS TECH COMPANY, Texas Technological College—Col. James B. Carvey, Maj. John F. Henry, and Capt. Richard E. Cavazos participated in a program held 16 October devoted to the Pentomic Army.

V. RAYMOND EDMAN COMPANY, Wheaton College—Meeting on 16 October viewed film, "The Traditions and Achievements of the United States Army."

VALLEY FORGE COMPANY, Valley Forge Military Academy—Sixteen cadets were accepted into the Company on 13 October.

WASHINGTON AND JEFFERSON ROTC COMPANY—Major Joseph Lynn, PARNG, addressed the meeting on 29 October on the National Guard, and conducted a question-and-answer period after his talk. Fourteen new members were pledged to the Company at this meeting.

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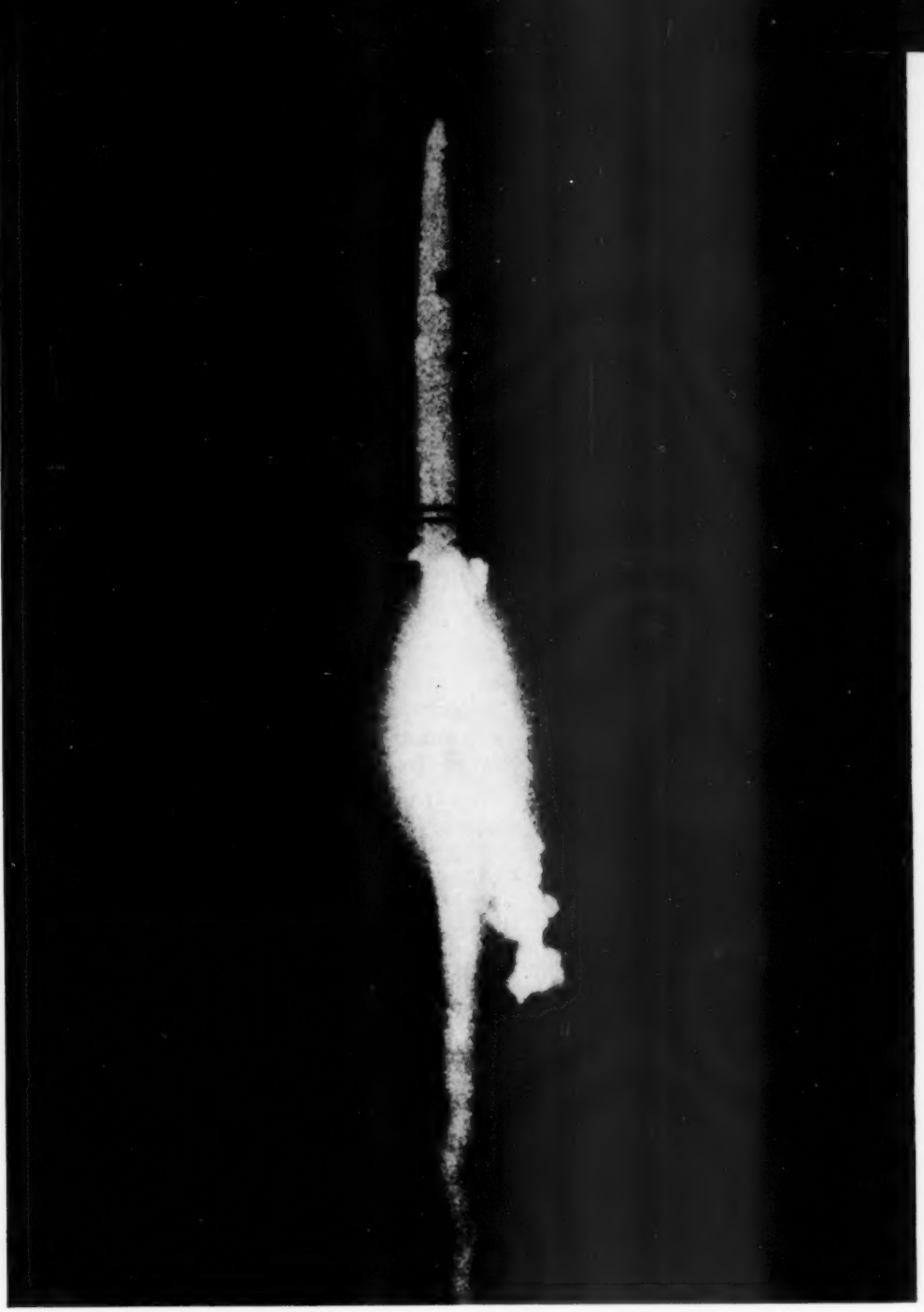

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